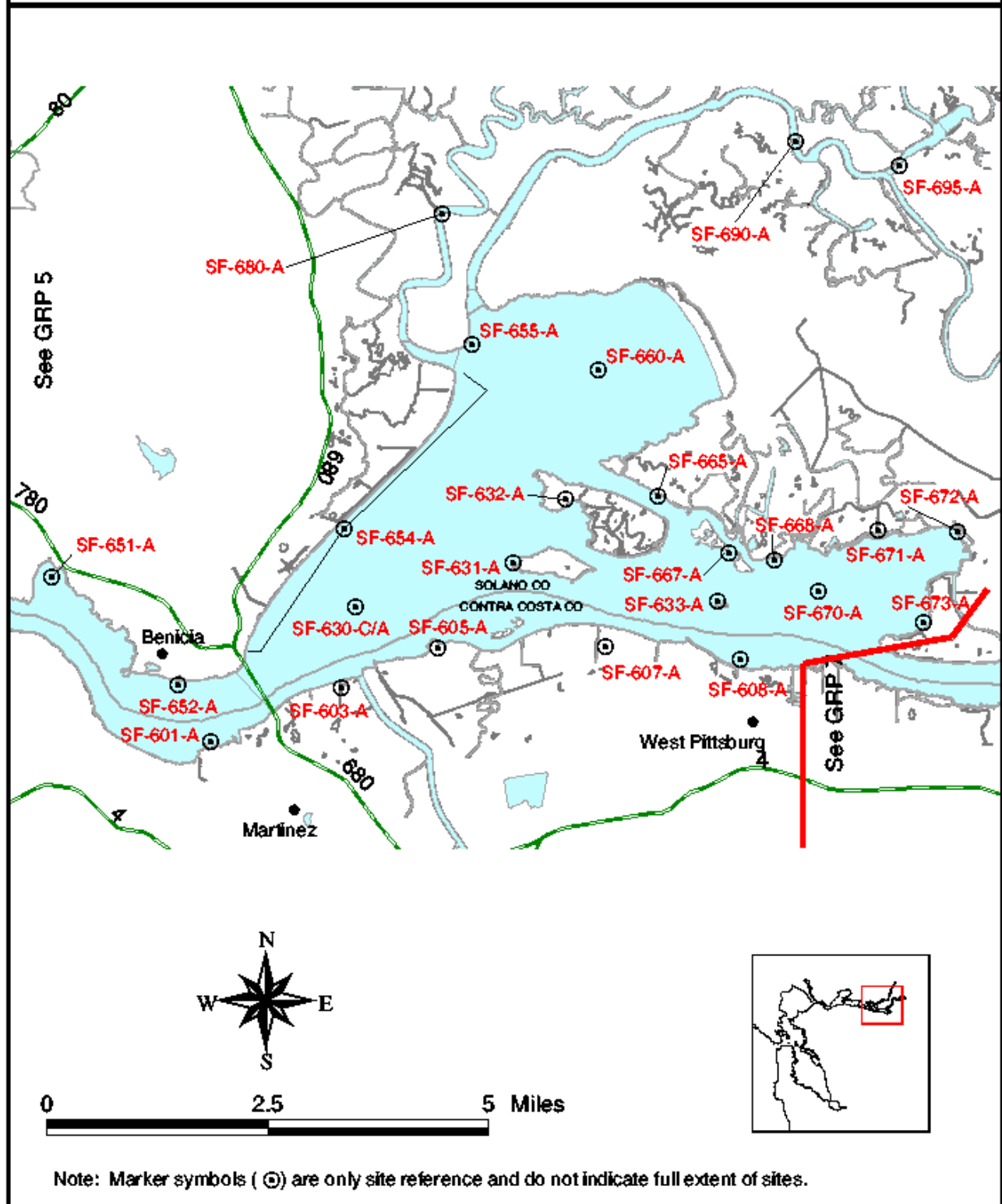




SF Geographic Response Area 6 Carquinez Strait/Suisun Bay Environmentally Sensitive Sites



Geographic Response Plan - 6

Table of Contents

GRP 6 Site Index/Response Actions	3
ACP Sensitive Site Resource List - GRP 6	4
PROBABILITY OF OIL REACHING EACH SENSITIVE SITE IN GRP	7
RESPONSE PRIORITIES FOR BENICIA BRIDGE SCENARIO * GRP 6	11
2-601 -A Martinez Marsh - Site Summary	13
2-603 -A Bulls Head Marsh and Pacheco Creek - Site Summary	17
2-605 -A Hastings Slough, Point Edith and Seal Island - Site Summary	21
2-607 -A Belloma Slough - Site Summary	26
2-608 -A Shore Acres Marsh - Site Summary	30
2-630 -A Suisun Shoal - Site Summary	34
2-631 -A Roe Island - Site Summary	36
2-632 -A Ryer Island - Site Summary	40
2-633 -A Middle Ground Island - Site Summary	44
2-651 -A Southampton Bay - Site Summary	48
2-654 -A Goodyear Marsh - Site Summary	56
2-655 -A Joice Island, Suisun Slough, and Montezuma Slough - Site Summary	60
2-660 -A Grizzly Bay - Site Summary	64
2-665 -A Simmons Island - Site Summary	68
2-667 -A Freeman & Snag Islands - Site Summary	72
2-668 -A Dutton Island - Site Summary	76
2-670 -A Honker Bay - Site Summary	80
2-671 -A Honker Bay West - Wheeler Island Shore - Site Strategy	82
2-672 -A Honker Bay North - Van Sickle Island Shore - Site Strategy	84
2-673 -A Honker Bay East - Chipps Island Shore - Site Strategy	86
2-680 -A Suisun Marsh West: Suisun Slough Drainage - Site Summary	88
2-690 -A Suisun Marsh Central: Grizzly Isl. / Montezuma SI - Site Summary	92
2-695 -A Suisun Marsh North: Denverton / Nurse SI Drainage - Site Summary	96

GRP 6 Site Index/Response Actions

Site ID	Priority	Site Name	Assignment	Date/Time Required	Date/Time Completed
SF-601		Martinez Marsh and Shell Dock Marsh			
SF-603		Bulls Head Marsh and Pacheco Creek			
SF-605		Hastings Slough, Pt Edith and Seal Isls			
SF-607		Belloma Slough			
SF-608		Shore Acres Marsh			
SF-630		Suisun Shoal			
SF-631		Roe Island			
SF-632		Ryer Island			
SF-633		Middle Ground Island			
SF-651		Southampton Bay			
SF-652		Benicia Marsh			
SF-654		Goodyear Marsh			
SF-655		Joice Island, Suisun Slough, and Montezuma Slough			
SF-660		Grizzly Bay			
SF-665		Simmons Island			
SF-667		Freeman & Snag Islands			
SF-668		Dutton Island			
SF-670		Honker Bay			
SF-671		Honker Bay West - Wheeler Island Shore			
SF-672		Honker Bay North - Spoonbill Ck and Vansickle Island			
SF-673		Honker Bay East - Chipps Island Shore			
SF-680		Suisun Marsh West: Suisun Slough Drainage			
SF-690		Suisun Marsh Central: Grizzly Isl			
SF-695		Suisun Marsh North: Denverton / Nurse Slough Drainage			

ACP Sensitive Site Resource List - GRP 6

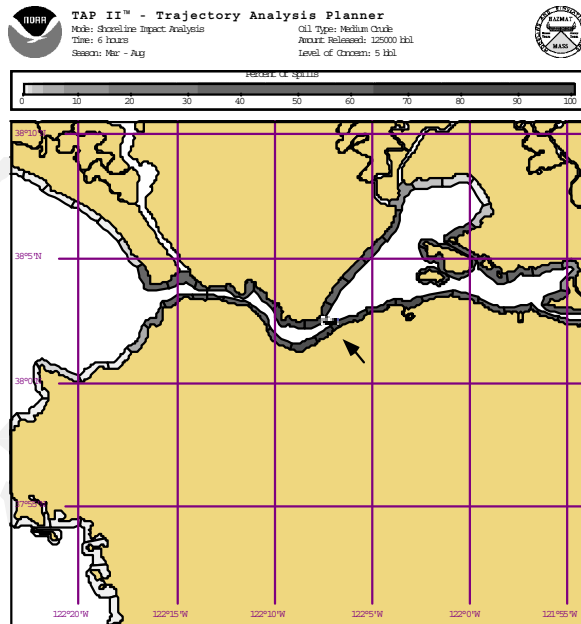
SITE SO	SUB	SITENAME Strategy Objective	HBOOM / skiff	SWBM	XBOOM	SORB	Bboat # / Type	Skimmer	Special Equipment	Deploy Personnel
2-601	1	Martinez Marsh 5		120		1120	0/1		boat capable of shallow grounding	2
	2	Martinez Marsh 7	For oil on the flood tide, exclude from entering Alhambra Creek and protect nearby shoreline from oil. Exclude oil from other tidal channels.	600			1/0			3
			For the ebb tide, deflect oil away from and past Alhambra Creek & marsh with deflection boom							
2-601	3	Martinez Marsh 7	For the Flood Tide: deflect away from Martinez shore	2000			3/1			11
	4	Martinez Marsh 8	If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites	8500			3/3		bboats - very shallow, strandable.	15
2-603	1	Bulls Head marsh and Pacheco Creek 5	exclude oil from entering Pacheco Creek, Peyton Slough and three other tidal channels	900	900	600	1/2		bboat: strandable, shallow water, stakes	7
	2	Bulls Head marsh and Pacheco Creek 6	Deflect oil to collection site at Tosco shoreline of Pacheco Creek to prevent oil spread to other marsh sites, to collect it, and prevent its free movement.	1700	2100	300	3/2	1	ropemop+VT stakes, bboat: strandable, shallow water	10
	3	Bulls Head marsh and Pacheco Creek 8	If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage.	9000						
	4	Bulls Head marsh and Pacheco Creek 5,6	If oil is moving down Pacheco Slough from an inland spill, deploy a containment collection as in strategy 2-603.2	1600			1	Duckbill &		
2-605	1	Hastings Slough, Point Edith and Seal Island 5	Exclude oil from Hastings Slough and tidal channels to prevent oil from being carried into marsh on flood tides.	2300	1000		4/6		bboat: shallow, strandable. Stakes	24
	2	Hastings Slough, Point Edith and Seal Island 7	Deflect oil away from shoreline on flood tide.	2000			3/0			9
	3	Hastings Slough, Point Edith and Seal Island 8	If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage.	7000			5/2		bboats: very shallow, groundable.	
2-607	1	Belloma Slough 5	Exclude oil from entering Belloma Slough.	300		300	0/1			
2-608	1	Shore Acres Marsh 5	Exclude oil from small tidal channels which admit oil to back marsh. Close dead-end sloughs to reduce oil margin impacts.	300			1/1			3 PERSONS
	2	Shore Acres Marsh 7,6	Deflect oil away from shoreline and into main channel. Deflect any by-passing oil to shore capture/collection.	3000			3/2	1	portable & VT	11PERSONS
	3	Shore Acres Marsh 8	If wind threatens to drive heavy slicks along shore, protect shoreline with exclusion boom per SF Bay Inlet Study.	8000			4/2			16 PERSON.
2-630	1	Suisun Shoal 10	If oiling is likely and birds are present, haze using sonic devices.							2 PERSONS
2-631	1	Roe Island 5	Exclude oil from entering tidal channel and penetrating interior of island.	500		100	0/1		airboat or hovercraft & stakes.	9-12
	2	Roe Island 7	Deflect booming at west end of island.	3000			3/1			11
2-632	1	Ryer Island 5	Exclude oil from entering east section of Island though levee breaks and penetrating the west section interior via tidal inlets.	1900	900	2000	3/3		very shallow draft boats	15-18
	2	Ryer Island 7	Deflect oil away from seal haulout at northwest tip.	400						3
	3	Ryer Island 5	Reducing south shore impacts by closing barrow channel inlets.	3000			1/1		boats - very shallow draft	4
2-633	1	Middle Ground Island 7	If oil is threatening from the west and likely to impact, deploy deflection boom to the SW from island.	1500			3/2			13 PERSONS
	2	Middle Ground Island 7	If oil is approaching from NW, deflect oil away from shoreline and into channel to north.	1500			1/2			7 PERSONS
2-651	1	Southampton Bay 7	Deflect boom past the site on the current contour line.	1200			2/1			8
	2	Southampton Bay 8	Protective booming of marshy exposure	5000	3000		3/2		Bboats: very shallow draft	13
	3	Southampton Bay 6	Shoreline containment and recovery	300			1/1	1	portable &	4
2-652	1	Benicia Marsh 5	If oil is threatening, exclusion boom tidal inlets.	150		150				2 PERSONS
	2	Benicia Marsh 6	If oil is near shore due to spill origin or wind, this is a good area for diversion to shore for capture and recovery.	2000			1/1	1	portable & Bboats: very shallow draft	6PERSONS
	3	Benicia Marsh 8	If there is heavy or continuous re-oiling, protective boom marshfront with light boom and sorbent.	5000	1000		2/1		Bboat: very shallow draft	8
2-654	1	Goodyear Marsh 5	If oiling is likely, close all tidal sloughs and Sulfur Springs Creek to keep oil out of marsh.	300			note		one airboat/hovercraft/shallow boat	2 PERSONS
	2	Goodyear Marsh 6	If heavy oiling/reoiling is a threat on incoming tide with a southerly wind, intercept along shore oil and direct to collection.	1000	1000	100	2/2	1/1	land/SPS Bboats: very shallow draft	13 PERSON
	3	Goodyear Marsh 8	If oil continues to threaten marshfront, deploy protective booming as recommended in SF Inlet Study by RPI/MSRC	27000			8/2		Bboats: very shallow draft	28
2-655	1	Joice Island, Suisun Slough, and Montezuma 5	exclude oil from entering Suisun and Montezuma Sloughs by collection booms to SP Skimmers.	3600			6/2	2	SPS	12-15
	2	Joice Island, Suisun Slough, and Montezuma 8	Protect oil from penetrating marshes at mouths of Suisun and Montezuma Sloughs	9000			10/2			30
2-660	1	Grizzly Bay 567	Keep oil in Suisun Cut channel and exclude it from moving across Grizzly Bay.	13000			12/2			40
2-665	1	Simmons Island 5,6	To intercept heavy oil flow though Suisun Cut and protect Honker Bay, divert the oil to collection areas.	3000			4/2	2	portable & VT	3500' of line 16 PERSON
	2	Simmons Island 5	Exclude oil from entering barrow channels and slough entrances.	1100	1550		2/4		very shallow craft, airboat, hovercraft etc.	15 PERSONS
	3	Simmons Island 5,8	Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending	10000	15000		10/6		2 hovercraft/airboat; 4 very shallow Bboat	44 PERSONS
2-667	1	Freeman & Snag Islands 5	Exclude oil from entering perimeter and interior channels of Freeman Island.	400	150		1/2			7 PERSON
	2	Freeman & Snag Islands 7	Depending on winds, divert oil past windward pockets to minimize shore oiling for Freeman and to lessor extent for Snag Island.	1300	2600		3/2			11 PERSON
	3	Freeman & Snag Islands 8	Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending	2000	13000		5/3			21 PERSON
2-668	1	Dutton Island 5	Exclude oil from entering barrow channels and slough entrances.							12 PERSON
	2	Dutton Island 5,6	If heavy oil is threatening Honker Bay and shorelines, divert oil to collection in quiet pockets.	1500			3/2	1	portable & VT extra line for scope	11 PERSON
	3	Dutton Island 5,6	If prevailing wind and oil threatens to overwhelm these measures, exclusion boom to protect shoreline especially easterly.	6000			6/3		hovercraft/airboat; very shallow draft	18 PERSON

SITE	SUB	SITENAME SO	Strategy Objective	HBOOM	SWBM	XBOOM	SORB	Bboat / skiff	# / Type Skimmer	Special Equipment	Deploy Personnel
2-670	. 1	Honker Bay		800	700			4/0	2 towed		15 PERSONS
		3	intercept oil approaching the bay with towed skimming arrays.								
	. 2	Honker Bay		1300				3/2			11 PERSON
		6	If heavy oil is approaching the shore, divert the oil to collection areas.								
	. 3	Honker Bay		11000				4/6		Bboat: very shallow draft; 1 hovercraft	25 PERSONS
		8	Protect the 2-mile stretch of marshfront from approaching heavy oil slick with protection/exclusion boom.								
2-671	. 1	Honker Bay West - Wheeler Island Shore		500	700			2/4			15 PERSONS
		5	Exclude oil from entering barrow channels and slough entrances.								
	. 2	Honker Bay West - Wheeler Island Shore		1300				3/2			11 PERSON
		7	If heavy oil is approaching the shore, divert the oil to collection areas.								
	. 3	Honker Bay West - Wheeler Island Shore		11000				4/6		hovercraft, air boat; 4 very shallow Bboats	25
PERSONS											
		8	Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending								
2-672	. 1	Honker Bay North - Van Sickle Island Shore		700	300			4/2	1 SSS		10 PERSONS
		5	Exclude/collect oil: exclude from entering Spoonbill Creek and barrow channels and divert to collection on Van Sickle shore.								
	. 2	Honker Bay North - Van Sickle Island Shore		1200				1/1	1 SSS	hovercraft, airboat	10 PERSON
		6	Deflect oil to collection site: use prevailing winds								
	. 3	Honker Bay North - Van Sickle Island Shore		12000				4/6		very shallow Bboat, hovercraft/airboat	25 PERSONS
		8	Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending								
2-673	. 1	Honker Bay East - Chipps Island Shore			550			1/1			5 PERSONS
		5	Exclude oil from entering barrow channels and slough entrances.								
	. 2	Honker Bay East - Chipps Island Shore		600				1/1			11 PERSON
		6	At Pt Simmons, deflect the oil past site to keep oil in channel and to avert carry-back into Honker Bay on eddy.								
	. 3	Honker Bay East - Chipps Island Shore		13000				6/6		shallow Bboats, 1 hovercraft/airboat	25 PERSONS
		8	Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending								
2-680	. 1	Suisun Marsh West: Suisun Slough Drainage		3000				4/4	4 portable & VT	Bboats; very shallow; 1 hovercraft	14 PERSONS
		5	Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close all side sloughs.								
2-690	. 1	Suisun Marsh Central: Grizzly Isl / Montezuma SI			4000			5/8	4 portable & VT	bboat: shallow draft; 1 hovercraft	31 PERSONS
		5	Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close side channels.								
2-695	. 1	Suisun Marsh North: Denverton / Nurse SI			2000			3/6	4 portable & VT	Bboat: shallow draft; 1 hovercraft	21 PERSONS
		5	Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close side channels.								

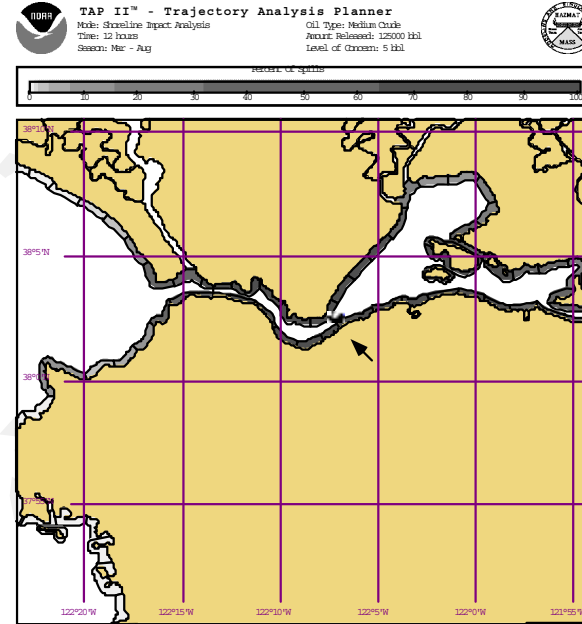
This Page Intentionally Left Blank

PROBABILITY OF OIL REACHING EACH SENSITIVE SITE IN GRP 6

GRP 6



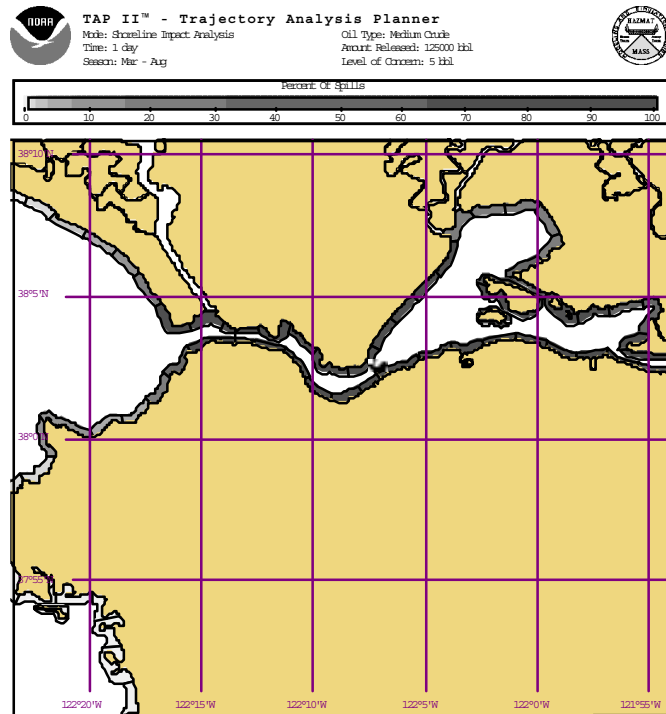
6 hours from start of spill



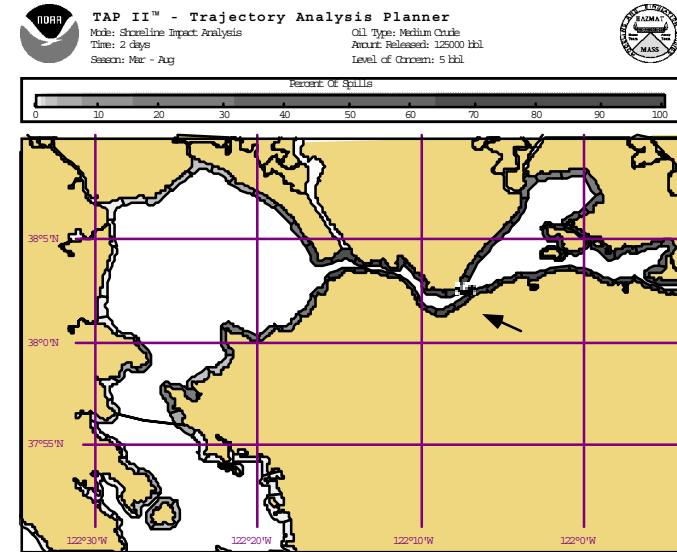
12 hours from start of spill

TAP II Maps for GRP6 Scenario: Release of 125,000 bbls of crude at Carquinez Bridge in indicates spill origin. The shades of grey at each impacted site correspond to of spill scenarios (from 500 runs of various wind, tides and currents) that brought oil to that site in the specified time frame (6hours or 12 hours).

GRP 6



24 hours from start of spill



48 hours from start of spill

TAP II Maps for GRP6 Scenario: Spill of 125,000 bbls of crude at Carquinez Bridge in the Spring. Arrow indicates spill origin. The shades of grey at each impacted site correspond to a percentage in the legend of the number of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level Of Concern) of oil to that site in the specified time frame (24 hours or 48 hours).

Table of Percent of Spills that bring oil (> 5bbls) to each site from the GRP6 scenario.

ACP SITE#	ES	SITENAME	LAT N (Deg. Min.)	LONG W (Deg. Min.)	6 HOURS (% prob)	12 HOURS (% prob)	24 HOURS (% prob)
2-630	A	Suisun Shoal	38 03.5	122 06	100	100	100
2-654	A	Goodyear Marsh	38 04	122 07	100	100	100
2-603	A	Bulls Head Marsh and Pacheco Creek	38 03	122 07	99	100	100
2-605	A	Hastings Slough, Point Edith and Seal Island	38 03	122 03	70	93	97
2-601	A	Martinez Marsh	38 02	122 08	66	90	99
2-652	A	Benicia Marsh	38 02.7	122 09.7	62	86	96
2-631	A	Roe Island	38 04	122 02	54	78	87
2-607	A	Belloma Slough	38 03	122 01	48	70	80
2-632	A	Ryer Island	38 05	122 02	47	68	78
2-651	A	Southampton Bay	38 04	122 11	46	75	96
2-608	A	Shore Acres Marsh	38 08	121 58.8	40	56	64
2-633	A	Middle Ground Island	38 03.7	121 59	40	56	64
2-667	A	Freeman & Snag Islands	38 08.8	121 59.5	40	54	69
2-583	A	Napa River Marshes	38 12	122 19	37	60	83
2-660	A	Grizzly Bay	38 08	122 02	37	48	56
2-665	A	Simmons Island	38 05.4	122 00	37	48	56
2-670	A	Honker Bay	38 04	121 56.3	36	21	26
2-702	A	Stake Point Marshes	38 03	121 57	34	46	62
2-582	A	N.E. San Pablo Bay	38 05	122 17	33	52	77
2-668	A	Dutton Island	38 08.8	121 59.5	31	44	58
2-705	A	Mallard Island	38 02	121 55	30	42	60
2-752	A	Chips Island, Southern Side	38 04	121 55	27	36	57
2-673	A	Honker Bay East - Chipps Island Shore	38 04	121 56.3	26	35	52
2-655	A	Joice Island, Suisun and Montezuma Sloughs	38 08	122 04	15	25	29
2-671	A	Honker Bay West - Wheeler Island Shore	38 04	121 56.3	8.8	27	35
2-672	A	Honker Bay North - Van Sickle Island Shore	38 04	121 56.3	3.6	21	26
2-504	A	Pinole Pt. Marshes - North	38 05	122 21		8.8	12
2-503	A	Pinole Pt. Marshes-South	37 59	122 21.6		7.2	10
2-501	A	Castro Creek and Marshes	37 58	122 24		3.6	5
2-506	A	San Pablo Bay Eelgrass Bed	37 59	122 25		3.6	5
2-452	A	Richmond Eelgrass Beds	37 58	122 24		3.4	5.6
2-427	A	Marin Islands	37 58	122 28		2.6	7.6
2-551	A	McNear's Beach Marshes	38 00	122 27		2.6	7.6
2-552	A	China Camp Marsh	38 00	122 28		2.6	7.6
2-505	A	Pinole Creek and Wetlands	38 01	122 18		2.6	3.6

2-502	A	San Pablo Creek Marshes	37 58.5	122 23		0.4	0.8
2-452	A	Richmond Eelgrass Beds	37 58	122 24			0.4
2-426	A	San Rafael Creek Marsh	37 58	122 29			0.2

RESPONSE PRIORITIES FOR BENICIA BRIDGE SCENARIO * GRP 6

TIDE AND WIND AT TIME OF INSTANTANEOUS DISCHARGE OF ANS	TIME PERIOD OILED (HOURS)	PRIORITY	SITE ID	SITE DESCRIPTION
SLACK < EBB - 10 NW	0	1		Spill Site Containment
WINTER RUNOFF	0	2		On-Water Recovery
125,000 bbl ANS crude	0-3	3	601	Martinez Marsh
	0-3	4	654	Southampton Bay
	3-6	5	603	Bull's Head Marsh
	6-12	6	582	NE San Pablo Bay (jetty)
	6-12	7	605	Hasting's Slough & Pt Edith
	6-12	8	631	Roe Island
	12-24	9	505	Pinole Creek
	12-24	10	503	Pinole Point
	12-24	11	632	Ryer Island
SLACK < EBB - 20 S	0	1		Spill Site Containment
WINTER RUNOFF	0	2		On-Water Recovery
125,000 bbl ANS crude	0-3	3	651	Southampton Bay
	6-12	2	601	Martinez Marsh
	6-12	3	603	Bull's Head Marsh
	6-12	4	582	NE San Pablo Marsh (jetty)
SLACK < FLOOD TIDE	0	1		Spill Site Containment
10 KNOT NW WIND	0	2		On-Water Recovery
WINTER RUNOFF	0-3	3	603	Bull's Head Marsh
125,000 bbl ANS crude	0-3	4	605	Hasting's Slough
	0-3	5	607	Belloma Slough
	0-3	6	631	Roe Island
	0-3	7	601	Martinez Marsh
	3-6	8	608	Shore Acres
	3-6	9	632	Ryer Island
	3-6	10	633	Middle Ground
	6-12	11	702/705	Stake Pt. Marsh / Mallard Island
	6-12	12	708	Chipp's Island
SLACK < FLOOD TIDE	0	1		Spill Site Containment
20 KNOT S WIND	0	2		On-Water Recovery
WINTER RUNOFF	0-3	3	654	Mothball Fleet Marsh
125,000 bbl ANS crude	3-6	4	655	Joice Island
	6-12	5	660	Grizzly Bay
	12-24	6	632	Ryer Island
	12-24	7	631	Roe Island
	12-24	8	603	Bull's Head Marsh
	12-24	9	601	Martinez Marsh
	12-24	10	662	Simmon's Island

* Based on Oil map trajectory model run by BlueWater Consultants in 1996
 □ Response strategy not yet written

This Page Intentionally Left Blank

Martinez Marsh - Site Summary

2-601

-A

County: Contra Costa
USGS: Benicia

GRP: Latitude 38 02 N Longitude 122 08 W
OSPR Map: Last ACP Update 04/26/1995

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes the marshes and waterfront from the Benicia-Martinez Bridge to the Ozol pier. This site has pickleweed saltmarshes on both the east and west side of the marina. The marshes are prograding with emergent species along the very shallow margins. The marsh to the east behind the Equilon terminal has some diked impoundments and has a small channel leading back into the marsh. Alhambra Creek opens to the marsh to the west and has marshy vegetation along some of its length. The shoreline vegetation from Alhambra Creek to Ozol Terminal grades from marsh to riprap.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

Marshes are A-priority at all times. Threatened and endangered species may be present throughout this site.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

Pickleweed marshes with emergent marsh margins are on both sides of the marina. Shelter tidal flats in front of the marshes provide habitat for infauna and foraging for birds and fish. There is riprap at the western edge along the railroad tracks.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Marshes provide habitat for marsh birds, ducks, shorebirds, and in winter migratory waterfowl. Clapper rail and black rails may use these marshes occasionally.

Both the endangered salt marsh harvest mouse and endangered salt marsh wandering shrew are found here. Two rare plants are found here: soft bird's beak and Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Dr. Naill McCarten	Botanical Research	(510) 841-8145	
B,O	Joseph Didonato	East Bay Regional Park District	(510) 635-0135	
B,O	Bill Nichols	East Bay Regional Park District	(510) 228-0112	
B	Jerry Karr	Exxon Benicia	(707) 745-7568	
B	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-601 -A Martinez Marsh - Site Strategy

County: Contra Costa

CHART: 18656 Suisun Bay

Latitude
38 02 N

Longitude
122 08 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes the marshes and waterfront from the Benicia-Martinez Bridge to the Ozol pier.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Air - Martinez Bridge power lines; Boats - shallow water & currents; ground traffic - railroad tracks, soft substrate

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Primary concerns are oiling of marsh east and west, intrusion of oil up Alhambra Creek in the west side marsh, and intrusion up the tidal channel in the east side marsh. Exclude oil from both channels and divert oil away from marshes to catchments or to main channel.

Avoid trampling marsh vegetation: rare plants and small endangered mammals are present. Avoid trampling oil into muds.

SITE STRATEGIES

Strategy 2-601.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

For oil on the flood tide, exclude from entering Alhambra Creek and protect nearby shoreline from oil. Exclude oil from other tidal

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

- 1) Exclusion booming: 100' of swamp boom in a chevron configuration backed by sorbent boom at the inlet to Alhambra Creek.
- 2) Protection booming: Deploy 1000' of sorbent boom along the marsh to the west of Martinez Marina (both sides of creek but mostly on the west side.)
- 3) There is a small tidal inlet to the marsh on the east of the marina. Exclude oil from entering with boom and sorbent (20' 4X4+). Mouth is between Equillon wharf and Shore Terminal wharf at bridge.

Strategy 2-601.2

(USCG Strategic Objective: 7)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

For the ebb tide, deflect oil away from and past Alhambra Creek & marsh with deflection boom

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy 600' of deflection boom extending west from inside the old ferry slip at Ferry Point (the pier), Martinez Marina. Set deflection angle into the current as may be possible under prevailing conditions.

Strategy 2-601.3

(USCG Strategic Objective: 7)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

For the Flood Tide: deflect away from Martinez shore

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deflect oil away from shoreline with 2000' 8X8+ Hboom. From the shoreline about a half mile west of treatment plant, deploy boom at a diagonal to the 15' depth contour.

Strategy 2-601.4

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

If oil is likely to severely coat the marsh and time and resources are available and their use will not preclude defending other sites against SO 4 and 5 impacts (seek concurrence of the trustee stratigist), deploy exclusion boom along the marsh front from the Benicia Bridge to the marina and from Alhambra Creek to the riprap to the west as follows:

Deploy 5200' of protective boom (4X4+) be deployed between Suisun Point and the Martinez Marina seawall, and deploy 3300' of protective boom (9X9+ or 4X4+ depending on presence of wind and chop) from Ferry Point at Martinez Marina to 1000 yards west where marsh ends and riprap begins. Deploy close to shore where shallows will aid with wind chop spillover problems; if there are wind chop conditions, boom layers will need to be backed with a second layer of 4X4+ boom. Because the water is so shallow, very shallow boom boats and skiffs will be required due to grounding and stranding hazards. (A similar strategy for deployment of exclusion boom is illustrated in "Potential Oil Spill Protection Strategies for San Francisco Bay, California" (Hayes and Montello, 1994).)

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-601.1		120		1/12+/- anchor & stakes	1120	0/1		boat capable of shallow grounding	2	twice daily checks	5
2-601.2	600			1/22+/-danforth + 20' chain		1/0			3		7
2-601.3	2000			4/22+/-danforths		3/1			11	2	7
2-601.4		8500		9/12/danforths & stakes		3/3		bboats - very shallow, strandable.	15	daily checks	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Proceed on Hwy 680 toward Martinez. Exit on Marina Vista just south of the Benicia-Martinez toll bridge and drive west to city center.

Turn right and drive across the railroad tracks to Martinez Marina. Marshes are on both sides of the Marina and park.

LAND ACCESS LEVEL:

Thorough land access to west. Foot only to east.

WATER LOGISTICS:

Access limitations: depth, obstructions:

Very shallow near shore. Some

obstructions on west half.

Boat Launching, Loading, Docking
and Services Available:

Launching and full boat services available at Martinez Marina on-site. Most boat services are
also available across the river at Benicia.







FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

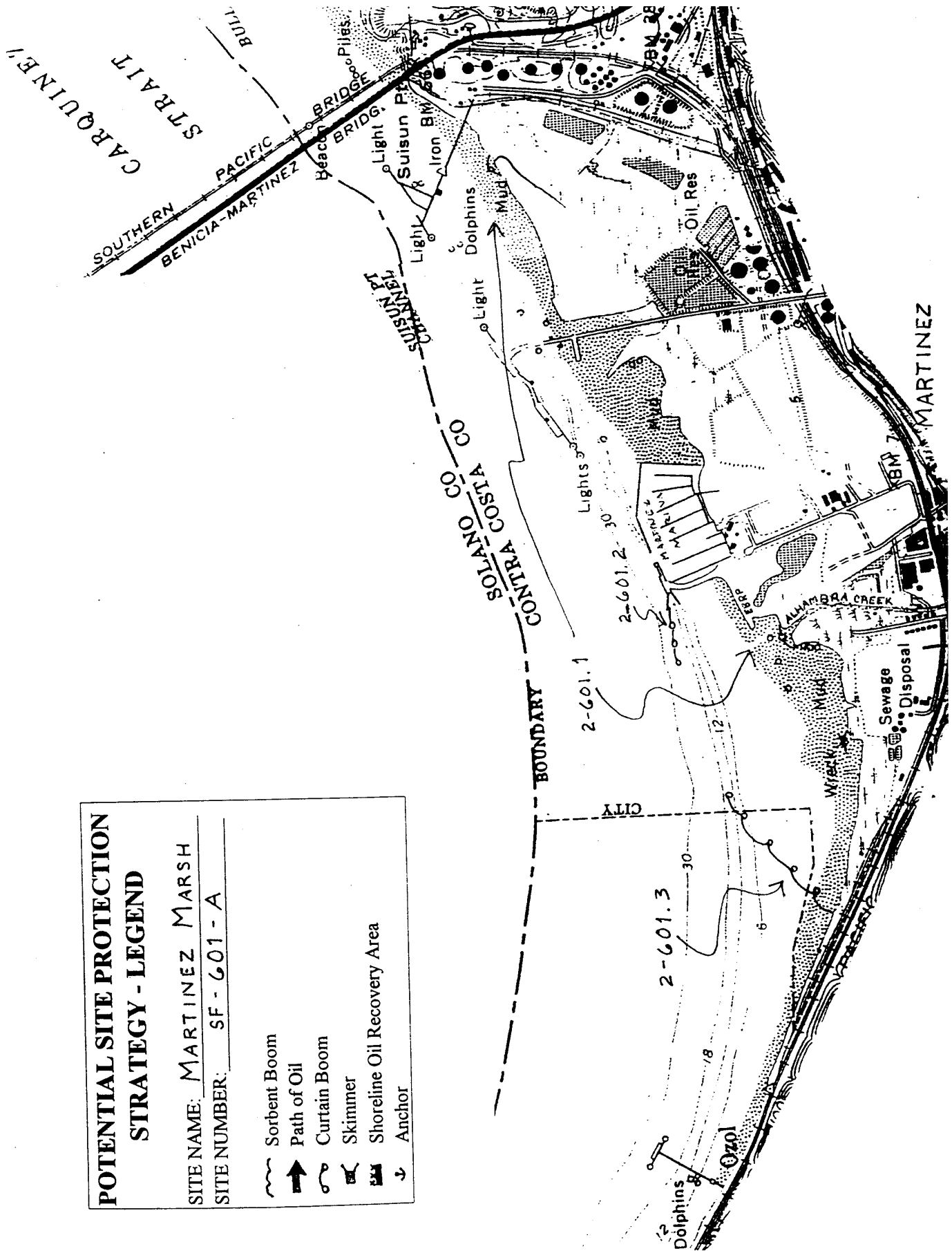
Both Martinez Marina and Benicia Marina have good staging facilities as does Exxon Wharf. Best for this site is Martinez Marina.

POTENTIAL SITE PROTECTION STRATEGY - LEGEND

SITE NAME: MARTINEZ MARSH

SITE NUMBER: SF - 601 - A

-  Sorbent Boom
-  Path of Oil
-  Curtain Boom
-  Skimmer
-  Shoreline Oil Recovery Area
-  Anchor



This Page Intentionally Left Blank

Bulls Head Marsh and Pacheco Creek - Site Summary

2-603 -A

County: Contra Costa
USGS: Vine Hill

GRP: Latitude 38 03 N Longitude 122 07 W
OSPR Map: Last ACP Update

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

Site extends from Benicia-Martinez Bridge to the Tosco Avon Wharf and includes the tidal marshes tributary to Suisun Bay and

Pacheco Creek to Hwy 4. The marshes between Hwy I-680 and Pacheco Creek are connected to the south shore of Suisun Bay

by several small waterways. There are two extensive marshes south of Waterfront Road: Shell Marsh (tributary to Peyton Slough

and owned by East Bay Regional Parks) and an unnamed marsh tributary to Pacheco Creek. The marshes are mostly

pickleweed-tule-saltgrass marshes with emergent growths along the edges of waterways and occasional patches of cattail marshes.

Pacheco Creek is very fresh in its more upstream reaches. There are various dikes and flood control channels throughout the

marsh. The channels tend to be deep. There are three refineries, a chemical plant, and several tank farms adjacent to and tributary to this site.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marshes are an "A" priority all year

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

The marshes have a rich flora and range from high pickleweed-spartina marsh to cattail to emergent marsh on prograding shorelines

and channel margins. Much of the marsh has been manipulated with dike and mosquito abatement channels. Much of the marsh

beyond the tidal channels is flood only on high tides and during the rainy season.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

A variety of wading and marsh birds use this area year-round and it provides winter habitat for migratory birds and ducks. The

endangered California clapper rail uses this habitat.

This is also habitat for the endangered saltmarsh harvest mouse and the saltmarsh ornate shrew.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Dr. Naill McCarten	Baylands Nature Preserve	(650) 329-2506	
	Brenda Grewell	Botanical Research	(510) 841-8145	
	Joseph DiDonato	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Jerry Karr	East Bay Regional Park		
	Mike Josselyn	Exxon Benicia	(707) 745-7568	
	Peter Baye	National Marine Fisheries Service, Tiburon	(415) 454-8868	
	Jan Knight	U S Army Corps of Engineers	(415) 744-3322	
		US Fish and Wildlife Service	(916) 978-4866	

2-603 -A Bulls Head Marsh and Pacheco Creek - Site Strategy

County: Contra Costa

CHART: 18656 Suisun Bay

Latitude
38 03 N

Longitude
122 07 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

Site extends from Benicia-Martinez Bridge to the Tosco Avon Wharf and includes the tidal marshes tributary to Suisun Bay and Pacheco Creek to Hwy 4.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

This area is very shallow and exposed mudflats at low tide.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Prime concern is oil being carried into the interior marsh via tidal channels and oiling of marsh margins. So, the first priority is to exclude oil from tidal channels and openings. Secondly, there is a plan to collect oil at the Tosco shoreline to prevent its free spread and movement. As time and priority allow, the entire marsh shoreline may be protectively boomed. Avoid trampling the marsh vegetation and be aware that small endangered mammals are present. Avoid trampling oil into the mud.

SITE STRATEGIES

Strategy 2-603.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

exclude oil from entering Pacheco Creek, Peyton Slough and three other tidal channels

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy exclusion booms in a chevron configuration in front of each tidal slough, securing boom ends well up and downstream from the openings to avoid entrainment and short-circuiting. 900' 9X9+ harbor (curtain) boom. Back with sorbent boom. If there is wave chop which is likely to overtop the boom, deploy a second chevron layer to capture any oil wash-over: use 900' 4X4+ swamp (river) boom. To permit boat passage into Pacheco Creek, it may be necessary to have boom tending or cascades.

Strategy 2-603.2

(USCG Strategic Objective: 6)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

Deflect oil to collection site at Tosco shoreline of Pacheco Creek to prevent oil spread to other marsh sites, to collect it, and prevent its free movement.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Create a collection site at the northerly most extreme of the levee road on Tosco land east of Pacheco Creek.

1) First, deploy two diagonal barriers of swamp (river) boom (600' 4X4+) to direct the oil from the mouth of the Creek to the collection site. Use stakes to anchor and maintain shape. (To permit boat passage into Pacheco Creek, it may be necessary to have boom tending or cascades.)

2) Line the marsh along the east bank with swamp (river) boom (1500') and tie the boom into the exclusion boom at the mouth. Use stakes to anchor and maintain shape.

3) Using the exclusion boom already at Pacheco Creek mouth (see strategy .1), run a deflection boom from the Shore Terminal wharf to the east bank of Pacheco Creek. An additional 1700' of 9X9+ boom will be needed to augment that already deployed at the Creek (2200' total). Use multiple anchors with heavy chain to hold the boom in position in the currents.

4) Improve the shoreside collection site as necessary. Consider excavating a pocket and seek approval from IC. Place plywood or other walking surface at work site to prevent oil being trampled into muds.

Strategy 2-603.3

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

If oil is likely to severely coat the marsh and time and resources are available and their use will not preclude defending other sites with Strategic Objectives 5 and 6 action (seek concurrence of the trustee stratigist), deploy exclusion boom along the marsh front from the Benicia Bridge to the marina and from Alhambra Creek to the riprap to the west.

Deploy protective booming of the shoreline using 9,000 ft of harbor boom. If there are high energy wave conditions, a second layer of swamp boom may be required. (A strategy for the deployment of exclusion boom at this site is illustrated in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montello, 1994).)

Strategy 2-603.4

(USCG Strategic Objective: 5,6)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

If oil is moving down Pacheco Slough from an inland spill, deploy a containment collection as in strategy 2-603.2

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Create a collection site at the southerly most convenient site on the windward shore, such as the Pacheco Creek bridge.

1) First, deploy two diagonal barriers of swamp (river) boom (600' 4X4+) to direct the oil in the Creek to the collection site. Use stakes to anchor and maintain shape. (To permit boat passage into Pacheco Creek, it may be necessary to have boom tending or cascades.)

2) Line the marsh along the east bank with swamp (river) boom (1000'). Use stakes to anchor and maintain shape.

3) Improve the shoreside collection site as necessary. Consider excavating a pocket and seek approval from IC. Place plywood or

Bulls Head Marsh and Pacheco Creek - Site Strategy (Continued)

2-603 -A

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-603.1	900	900		5/22+ & 10/12+/danforths + chain	600	1/2		bboat: strandable, shallow water,	7	2	5
2-603.2	1700	2100		5/22+/danforth + chain	300	3/2	ropemop+VT	1 stakes, bboat: strandable, shallow	10	2	6
2-603.3	9000										8
2-603.4		1600		6/12+ and stakes			Duckbill & VT	1			5,6

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Exit Hwy I-680 to Marina Visa / Waterfront Road at Martinez (exit just south of Benicia Martinez Bridge) and proceed east. There is access to the shoreline from Shore Terminal's wharf, from the Tosco Avon Refinery, and at the Bridge over Pacheco Creek. By boat, proceed east from the Martinez Marina about a mile to the area east of the Martinez-Benicia Bridge.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
All vehicles: at Tosco property and Shore Terminal wharf; otherwise foot

WATER LOGISTICS:

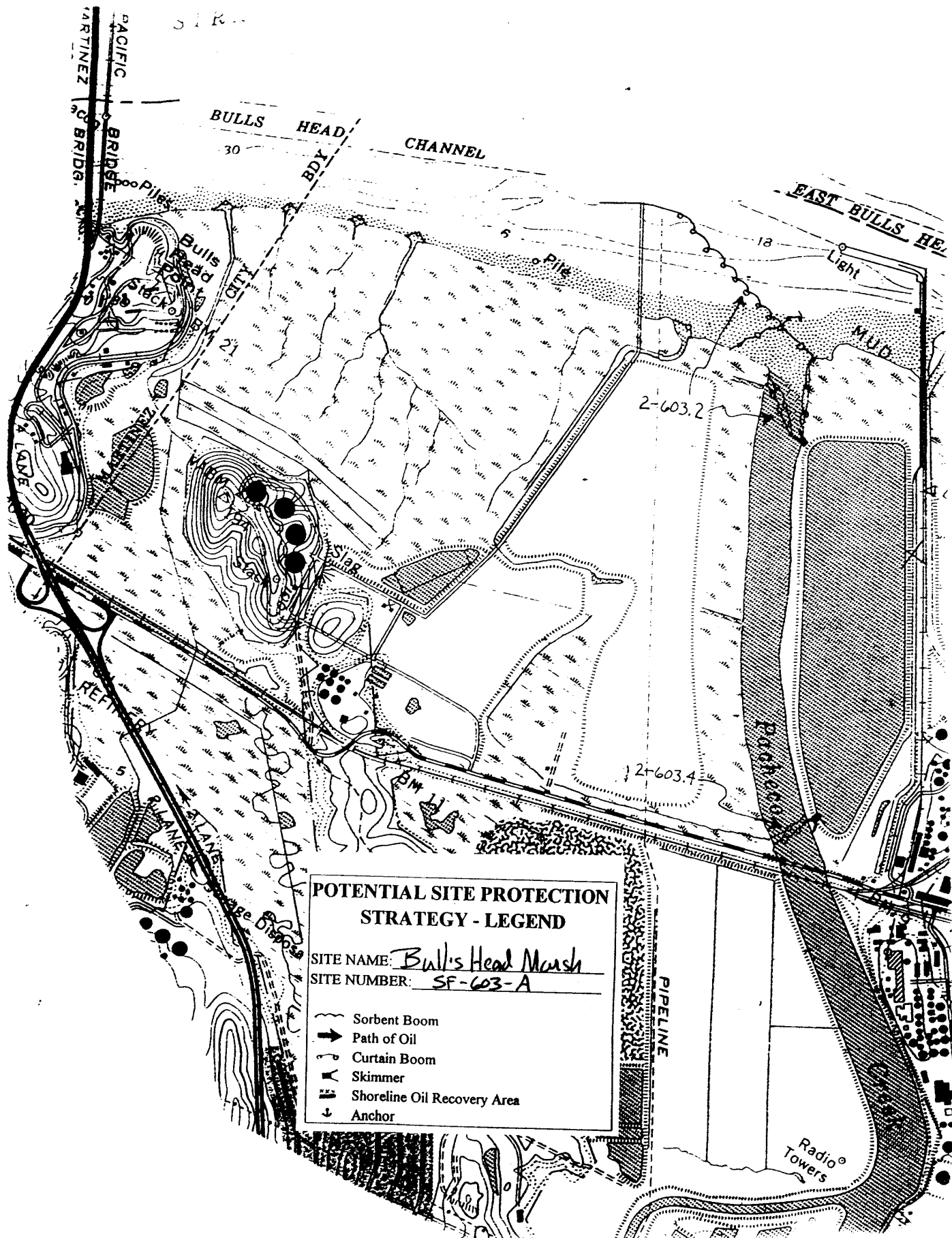
Access limitations: depth, obstructions: exceedingly shallow - mud at low tide
Boat Launching, Loading, Docking launch at Tosco to Pacheco Creek, otherwise Martinez Marina and Benicia Marina. Full service
and Services Available: at Martinez and Benicia.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best staging is at Martinez because of the amount of services available. Benicia is also a good staging site. Locally equipment may be staged at Tosco at Pacheco Creek or at Shore Terminal wharf.

COMMUNICATIONS LIMITATIONS / PROBLEMS: ☒ No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



Hastings Slough, Point Edith and Seal Island - Site Summary

2-605

-A

County: Contra Costa
USGS: Vine Hill

GRP: Latitude 38 03 N Longitude 122 03 W
OSPR Map: Last ACP Update

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

Site extends from the Tosco Avon terminal wharf to the Concord Naval Weapon Station tug dock and includes Seal Islands and the marshes tributary to Hastings Slough including those south of Waterfront Road. This marsh has a large tidal prism. There are several thousand acres of marsh most of which drain by various tidal channels to Hastings Slough. There are additional 13 tidal channels draining directly to the bay. Hastings Slough is very sinuous and has many tributary channels including Mt. Diablo Creek.

There is an extensive network of mosquito abatement channels which connect the freshwater and brackish marshes between.

Most of the marsh is pickleweed, but there are large stands of tules and standing ponds. Seal Islands are at the north east end of the marsh front opposite the tug docks. The islands are high marsh - spartina, sedges, and tules.

There are three main ownerships: USN, DFG and Tosco. The central, western portion of the waterfront to Waterfront Road is owned by the Department of Fish and Game and is a wildlife refuge with public hunting during the duck season. Tosco has ownership of the northwest corner, the channel at the west margin, and the marsh at the south central portion. Most of the easterly portion is USN property and has restricted access for security: including Seal Islands, the channel between the islands and the docks, most of Hastings Slough, most of the marshes on the east end of the site, and most of the marshes south and east of Waterfront Road (contact the Chief Master at Arms and tug wharf personnel for access approval).

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marshes are an "A"-priority all year. The area is important to migratory birds in the spring and fall. Endangered species are present year-round.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

Emergent and tidal channel marshes are of highest concern because of immediate vulnerability to spills and opportunity to spread oil extensively though the marsh because of large tidal prism. Some of the internal marshes are connected by flood control structures and can be closed to exclude oil conveyance to interior marsh. Marsh types include emergent, high saltgrass, pickleweed, tule, brackish ponds, and pockets of freshwater marsh.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The endangered California clapper rail, threatened California black rail, saltmarsh common yellowthroat, and Suisun song sparrow are found here.

The marshes are inhabited by the endangered salt marsh harvest mouse. Several rare plants occur in this site. Mason's lilaeopsis is found in the splash zone along the marsh front. The marshes also contain the rare plant species soft bird's beak, and Delta tule pea occurs on the Seal Islands.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Phillis Faber			
B		Baylands Nature Preserve	(650) 329-2506	
B	Dr. Naill McCarten	Botanical Research	(510) 841-8145	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
ETL	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
B	Jerry Karr	Exxon Oil	(707) 745-7568	
B	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
BLO		Suisun Resource Conservation District		

San Francisco Bay & Delta
9973-GRP6-21

B
B

Jan Knight
Dr Peter Baye

US Fish and Wildlife Service
USFWS Ecological Services

(916) 978-4866
(707) 562-3003

2-605 -A Hastings Slough, Point Edith and Seal Island - Site Strategy

County: Contra Costa

CHART: 18656 Suisun Bay

Latitude
38 03 N

Longitude
122 03 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

Site extends from the Tosco Avon terminal wharf to the Concord Naval Weapon Station tug dock and includes Seal Islands and the marshes tributary to Hastings Slough including those south of Waterfront Road.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Some of the waterfront has very shallow mudflats.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

The prime concerns are oil penetrating the marsh up tidal sloughs on tidal currents, particularly Hastings Slough, and oil saturating marsh vegetation on exposed marsh fronts and margins. Exclusion is first priority: to Hastings Slough and small channels. Next priority is to deflect oil away from these inaccessible marshy shores. During response be aware that there are very small rare plants and mammals at the shoreline. So, minimize foot traffic. Avoid trampling vegetation and avoid trampling oil into muds.

SITE STRATEGIES

Strategy 2-605.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
05/17/1999 07/01/1995 01/01/2000
07/01/1995

Objective or Prevention Condition

Exclude oil from Hastings Slough and tidal channels to prevent oil from being carried into marsh on flood tides.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Exclude oil from entering all tidal sloughs using chevron booming configurations, including center anchors, and anchor boom ends well outside channel mouth to avoid entrainment and short circuiting around boom ends.

1) Hastings Slough: 800' 9X9+ deployed in a modified chevron beginning well to the west (300'+) of the mouth. Back with sorbent boom. If wave chop is likely to wash oil over the boom, deploy a second layer of boom (800' 4X4+) close behind to catch and exclude over wash. 3/22+/danforths.

2) The 6 sloughs just east of Pt Edith: 400' 9X9+ . Back with sorbent boom. 1/22+ & 2/12+ danforths.

3) The ten tidal openings west of Pt Edith: 100' 9X9+ for each opening except #7 (from west) requires 200' (1100' total). Back each with sorbent. Back #7 with 200' of 4X4+ and back others if wave over topping is likely.

Strategy 2-605.2

(USCG Strategic Objective: 7)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

Deflect oil away from shoreline on flood tide.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy 2000' deflection boom from just west of Pt Edith past channel marker R2 and into channel.

Strategy 2-605.3

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

If oil is likely to severely coat the marsh and time and resources are available and their use will not preclude defending other sites against Strategic Objectives 5 and 6 needs (seek concurrence of the trustee strategist), deploy exclusion boom along the marsh front from the Tosco Wharf to the US Navy piers and linking with existing boom deployments as convenient.

Deploy protective booming of the shoreline: an additional 7,000 ft of harbor boom will be required in combination with boom already deployed in strategies .1 and .2. (A similar strategy for the deployment of exclusion boom at this site is illustrated in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montello, 1994).)

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-605.1	2300	1000		5/22+ & 32/12+ danforth, crown		4/6			bboat: shallow, strandable. Stakes	24	2	5
2-605.2	2000			5/22+/danforths + 20'chain		3/0				9		7
2-605.3	7000			8/22+/danforths		5/2			bboats: very shallow, groundable.			8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Take Hwy I- 680 north to Highway 4 east. Exit at Waterfront Rd and proceed west to Naval Weapons Station piers. Important: Permission to enter the area must be obtained from the U.S. Naval Weapons Station Concord. Naval response resources at the NWS may be able to boom off the slough.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
All types to Waterfront Road. Otherwise foot only.

WATER LOGISTICS:

Access limitations: depth, obstructions: Very shallow water. Exposed mud at low tide.

Boat Launching, Loading, Docking very poor launch at CNWS tug wharf. Commercial Launching at Martinez, Benicia, and
and Services Available: McAvoy's in Bay Point, all have complete services. Tosco launch is at Pacheco Slough.

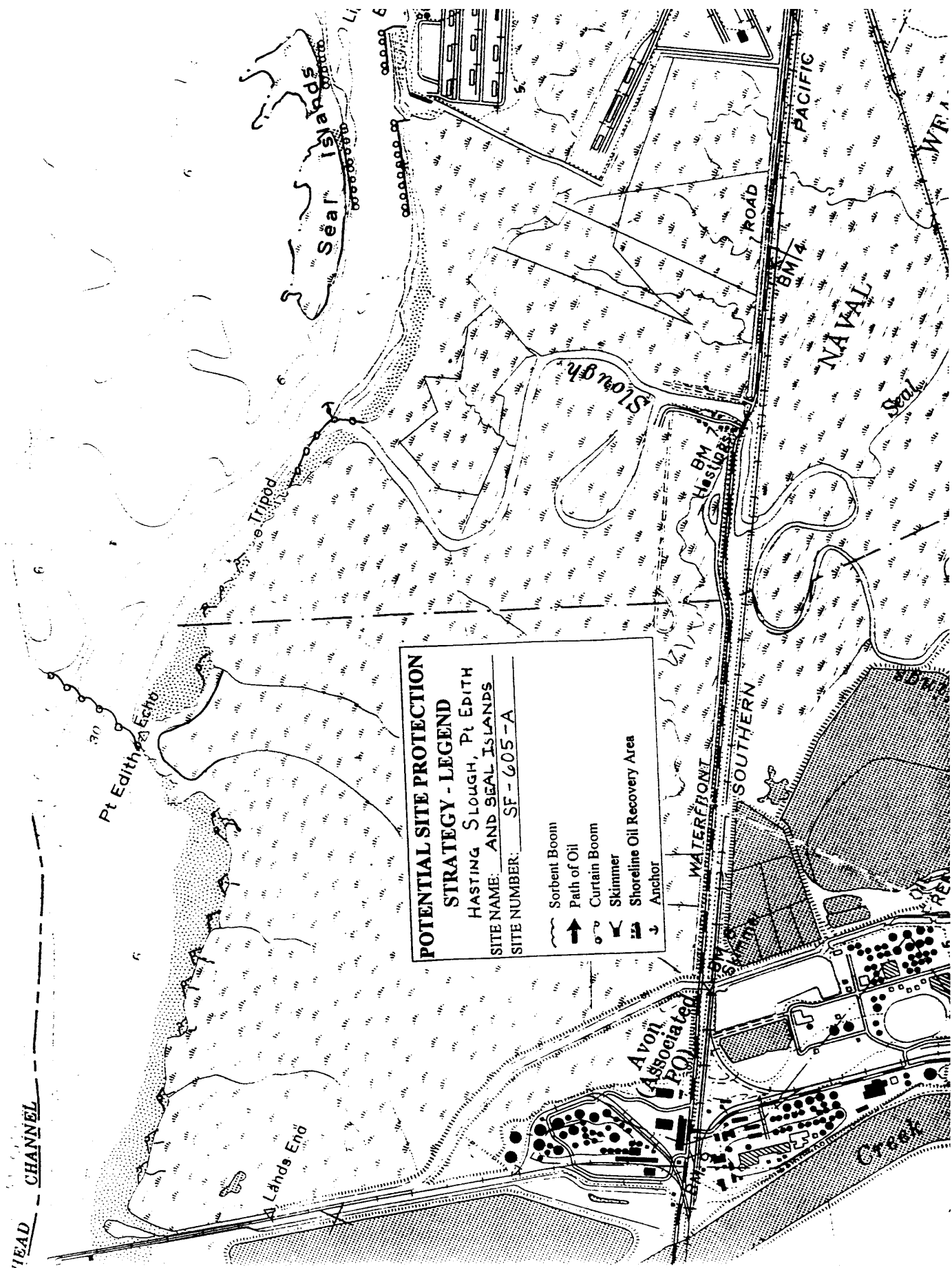
FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Martinez and McAvoy-Harris's are two primary staging areas depending on zone of spill impacts. Both have wide variety of services and access, potential for security control.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



This Page Intentionally Left Blank

Belloma Slough - Site Summary

2-607 -A

County: Contra Costa
USGS: Vine Hill

GRP: **Latitude** 38 03 N **Longitude** 122 01 W
OSPR Map: **Last ACP Update**

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

Three Channels connect this brackish marsh with the south shore of Suisun Bay. The largest and most westerly of these is Belloma Slough

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marshes are an "A" priority all year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

These are extensive pickleweed marshes with emergent tule margin.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The marshes are inhabited by the endangered California clapper rail and threatened California black rail. This is prime waterfowl habitat, particularly for the migratory period.

The endangered Salt marsh harvest mouse thrives here.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Phillis Faber			
	Dr. Naill McCarten	Baylands Nature Preserve	(650) 329-2506	
	Brenda Grewell	Botanical Research	(510) 841-8145	
	Trinidad Huerta	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Chief Master at Arms	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
	Paul Rankin	Concord Naval Weapons Station - USN	(925) 246-2000	
	Jerry Karr	Concord Navel W.S. - Environmental	(925) 246-5674	(510) 246-5174
	Jan Knight	Exxon Oil	(707) 745-7568	
	Dr Peter Baye	US Fish and Wildlife Service	(916) 978-4866	
		USFWS Ecological Services	(707) 562-3003	

2-607 -A Belloma Slough - Site Strategy

County: Contra Costa

CHART: 18656 Suisun Bay

Latitude
38 03 N

Longitude
122 01 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Unauthorized personnel or trespassers are subject to arrest. Beware of shallow and pier traffic.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This extensive marsh is very sensitive and has endangered species. If oil gets into the marsh the problems will be complicated due to the military security issues here. The plan is to exclude oil from the marsh by booming or diking the inlets. Response concerns are : 1) get permission from USN before attempting any access; 2) avoid trampling vegetation: tiny endangered plants are present; avoid trampling vegetation tiny endangered plants are present; avoid trampling oil into the muds.

SITE STRATEGIES

Strategy 2-607.1

(USCG Strategic Objective: 5) Dates: SISRS Approved last tested ACP date

Objective or Prevention Condition

Exclude oil from entering Belloma Slough.

Technique Details

Check here means " No strategy diagram": () Check here means "Contact CCC": ()

Exclusion Booming/Sediment Dike: Construct a sediment dike across Belloma Slough at White Rd. (Requires BCD and US Corp Engineer contacts) An alternate, but probably less effective strategy is to deploy 300 ft. of exclusion boom across the entrance to the and back with sorbent boom. Naval response resources at the Concord Naval Weapons Station may be available to dike or boom

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-607.1	300			3/12+/danforth & stakes	300	0/1						5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

IMPORTANT: Permission to enter the area, by land or water, must be obtained from the U.S. Naval Weapons Station, Concord. Exit Hwy 4 at Port Chicago Hwy to Main St and proceed to main gate for entry permission and directions. By water proceed along the shoreline from Martinez (east) or from McAvoy's (west) until you reach the Navy piers.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)

WATER LOGISTICS:

Access limitations: depth, obstructions: very shallow

Boat Launching, Loading, Docking Launch at USN CNWS tug dock, Martinez, McAvoy
and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

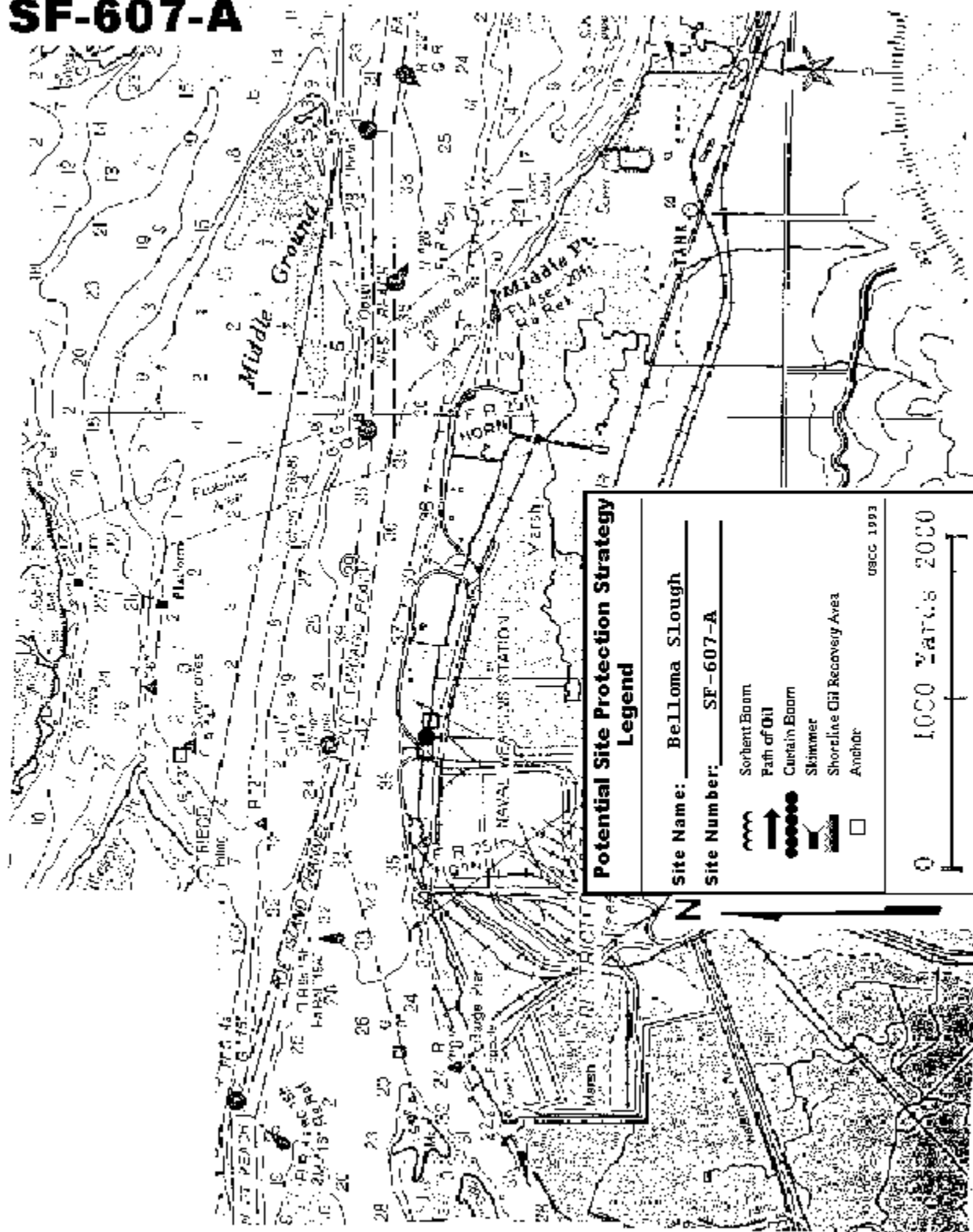
Naval response resources at the Concord Naval Weapons Station may be available to dike or boom off the slough. Stage equip at Martinez, McAvoy's or Concord Naval Weapons Station.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

SF-607-A



This Page Intentionally Left Blank

Shore Acres Marsh - Site Summary

2-608

-A

County: Contra Costa
USGS: Honker Bay

GRP: 6 Latitude 38 08 N Longitude 121 58.8 W
OSPR Map: 148 Last ACP Update 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site extends from McAvoy's Marina west to Middle Point (just west of the chemical plant). This site is a combination of tidal and high marsh with both tule/cattails and pickleweed. It has an abrupt bank typical of eroding marsh front. Several finger sloughs carry tidal exchange to the back marsh. There are several dead-end sloughs. There is a long shore channel.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

These marshy areas have A-protection priority always. Migratory waterfowl and marsh birds use this area during winter months.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This site is predominantly pickleweed / spartina marsh, but there are substantial cattail and tule growths. And there are some ponded areas. The bayward eroding edge is habitat for Mason's lilaeopsis. The small tidal inlets admit tidal exchange to the back marsh must be boomed to exclude oil from entering.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The marshy margins are prime marsh bird and waterfowl habitat including California clapper rail, Suisun song sparrow and black rail.

The saltmarsh harvest mouse has been found here. The emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat. Western pond turtle has been found here.

The emergent marshes here are typical tule-sedge mix with some cattail. Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster, Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Phillis Faber			
B		Baylands Nature Preserve	(650) 329-2506	
TEL	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
E/B/L/C/T/O	Ed Littrell	Ca Dept. of Fish and Game	(916) 358-2924	(916) 358-2912
EL	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
TEL	Chief Master at Arms	Concord Naval Weapons Station - USN	(925) 246-2000	
E/B	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
E/B/L/C/T/O	Martin Vitz	East Bay Regional Park		
E/B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-608 -A Shore Acres Marsh - Site Strategy

County: Contra Costa

CHART: SUISUN BAY 18658/18556/18656

Latitude
38 08 N

Longitude
121 58.8 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site extends from McAvoy's Marina west to Middle Point (just west of the chemical plant).

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There is a channel immediately along shore, but there is a bar farther out.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This is a sensitive saltmarsh with endangered plants and animals. Penetration into emergent marsh channels is primary concern. Also of concern is oiling of the marsh front. Responders should make an effort to minimize trampling of vegetation and be aware that tiny endangered plants and animals are present. Also, don't trample oil into sediments.

SITE STRATEGIES

Strategy 2-608.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/01/1997 09/04/1997

Objective or Prevention Condition

Exclude oil from small tidal channels which admit oil to back marsh. Close dead-end sloughs to reduce oil margin impacts.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

The tidal channels are very small. They are located about 100', 200', and 300' west from the west McAvoy entry. Each will require 25' of 4x4+ Hboom. Boom anchoring may be necessary (as opposed to staking) because bridging may admit oil at low flood. At the deadend slough use 200' 4X4+ Hboom with stakes or anchors. Repeat deployment if currents or waves are likely to overtop boom. Leave trailing boom ends to insure a seal and prevent shortcircuiting. Back with sorbant.

Strategy 2-608.2

(USCG Strategic Objective: 7,6)

Dates: SISRS Approved last tested ACP date
07/01/1997 09/04/1997

Objective or Prevention Condition

Deflect oil away from shoreline and into main channel. Deflect any by-passing oil to shore capture/collection.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

From Middle Point deploy deflection boom at the best angle fend oil past marshfront and back into main channel. Setup a deflection to shore and a shore skimming collection system at General Chemical shoreline to intercept any oil which escapes above deflection.

Strategy 2-608.3

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
07/01/1997 09/04/1997

Objective or Prevention Condition

If wind threatens to drive heavy slicks along shore, protect shoreline with exclusion boom per SF Bay Inlet Study.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

If forgoing strategies are inadequate to keep oil off marshes, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-608.1		300		10/3/danforths & stakes		1/1				3 PERSONS	freq checks: bridging	5
2-608.2	3000			18/22#+ danforths + 15' chains	3/2		portable & VT	1		11PERSONS	2 tenders, 3 skimmer	7,6
2-608.3	8000			10/22+/danforths & stakes	4/2					16 PERSON.	use above tenders.	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This site can be reached taking the Bay Point (Willow Pass) exit from Hwy 4 and then to Port Chicago Highway: marsh access through a locked gate (This is Concord Naval Weapons Station property). Also, via the General Chemical Plant. By water, the site is immediately west of McAvoy's Marina.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
ALL TYPES DEPENDING ON WEATHER

WATER LOGISTICS:

Access limitations: depth, obstructions: none have been identified.

Boat Launching, Loading, Docking McAvoy/Harris Marina at Bay Point is immediately to the east. Martinez Marina (9 mi. W).
and Services Available: Pittsburg Marina (6 mi. E).

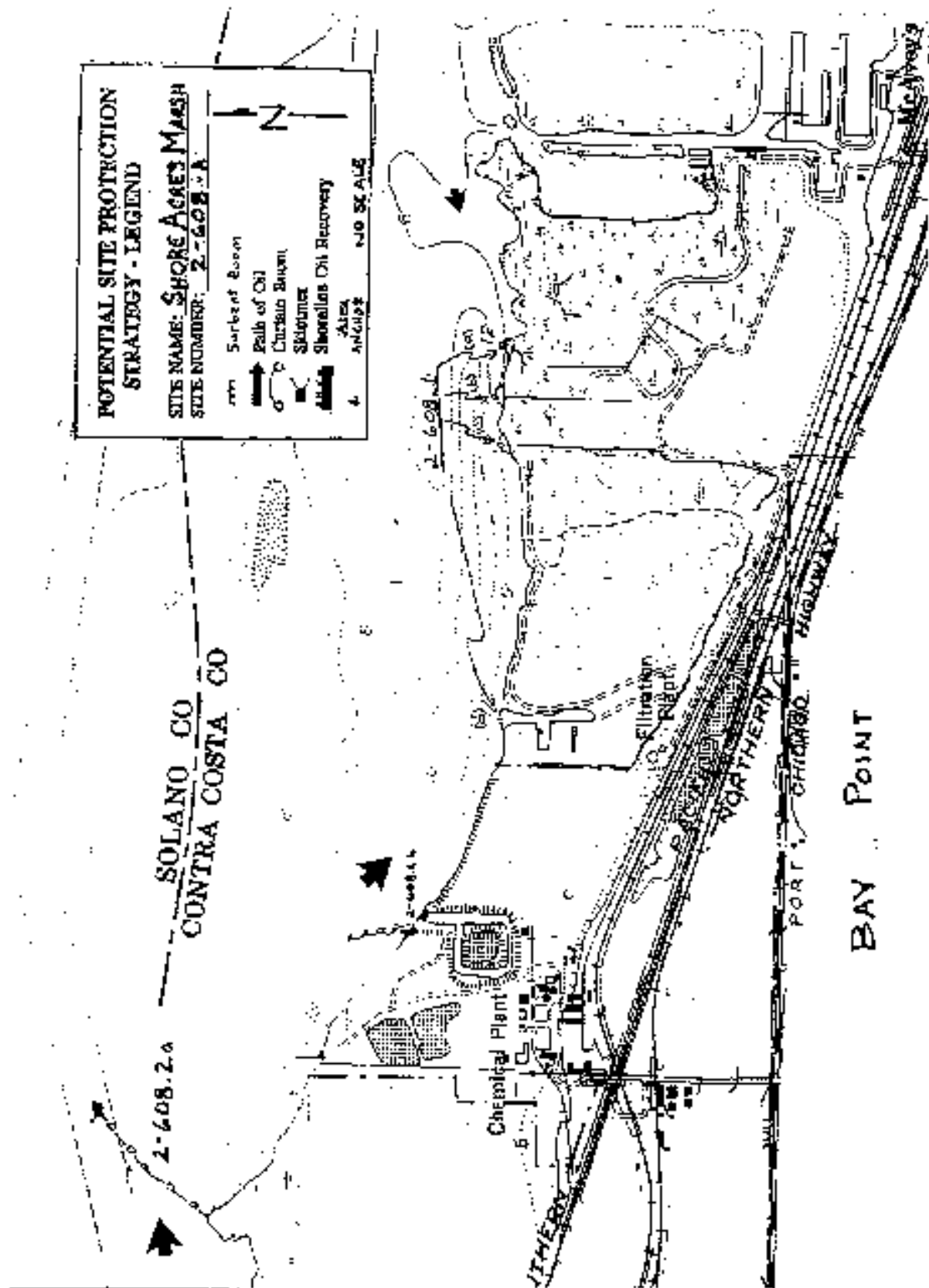
FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Pittsburg, Martinez or McAvoy's marinas. McAvoy's is possible field post and staging / support site: all manner of facilities, except housing, are available, and area can be secured.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



This Page Intentionally Left Blank

Suisun Shoal - Site Summary

2-630

-A

County: Solano
USGS: Benicia/Vine Hill

GRP: 6 Latitude 38 03.5 N Longitude 122 06 W
OSPR Map: 146 147 Last ACP Update 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site is the shallow mud bar which begins a half mile east of the Benicia Bridge and continues to Roe Island. The shoal is an extensive mud-sand bar about a mile wide at its widest and over three miles long. Generally the sediments are firm and will support pedestrian activity. During high tides it is a navigational obstruction to all but shallow draft vessels, but during low tides extensive portions are exposed. Intertidal life here is variable depending on local salinity conditions. Waterfowl and shorebirds frequent this shoal to feed and loaf.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

This mudflat has B-level sensitivity when birds are using it for resting and foraging. Otherwise protection is C-level.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This is a firm sediment mud-sand bar which is habitat for eurihaline species of invertebrates. It is feeding habitat for fish and when exposed, is resting and feeding for waterbirds and shorebirds.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Waterfowl and shorebirds here are daily transients because it is covered with water for part of each day.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
T	John Takekawa		(707) 557-9880	
TB	Kathy Hieb	Ca Dept of Fish and Game, Bay/Delta	(209) 942-6078	
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
T	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
TB	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	

2-630 -A Suisun Shoal - Site Strategy

County: Solano

CHART: SUISUN BAY 18657/18652

Latitude
38 03.5 N

Longitude
122 06 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site is the shallow mud bar which begins a half mile east of the Benicia Bridge and continues to Roe Island.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

The mudflat is very shallow and should be approached with caution, particularly on a falling tide.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Primary concern is oiling birds which rest and feed on this bar during low tide. Execution of the strategy is at the recommendation of the Wildlife Operations Branch Chief only.

SITE STRATEGIES

Strategy 2-630.1

(USCG Strategic Objective: 10)

Dates: SISRS Approved last tested ACP date
07/01/1997 09/04/1997

Objective or Prevention Condition

If oiling is likely and birds are present, haze using sonic devices.

Technique Details

Check here means "No strategy diagram": (X) Check here means "Contact CCC": ()

This strategy may be executed at the direction of the Wildlife Branch Chief only. Stake and anchor 4 sonic devices along the bar.

Attend regularly. Access at other than high tide may require airboat or hovercraft.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-630.1										2 PERSONS	frequent checks	10

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no land access. Water access is one mile east from Benicia or Martinez marinas.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
FOOT.

WATER LOGISTICS:

Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES

Boat Launching, Loading, Docking Benicia and Martinez Marinas (1 mi. W).

and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Martinez Marina, Benicia Marina or Benicia wharf.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS:

No strategy diagram available

Roe Island - Site Summary

2-631 -A

County: Solano
USGS: Fairfield South, Vine Hill

GRP: Latitude 38 04 N Longitude 122 02 W
OSPR Map: Last ACP Update

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes all of Roe Island. Roe Island is a marshy island in Suisun Bay which is predominantly a high tidal marsh with high tidal ponds, supporting a rich diversity of marsh plants. The island has never been diked. Several channels connect the marshes with Suisun Bay. There are shallow shoals on east and west ends. Protected margins and some channels have emergent vegetation. Most of the shoreline is wave washed and eroding.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marsh is "A" priority all year. Sensitive species of plants and animals occur here.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

The island has predominantly high marsh. Most of the shoreline is exposed to wave action and is eroding which are difficult to protect. The tidal channels can convey oil to interior areas. There are several areas around the island margin which are protected from aggressive waves and have emergent marsh vulnerable to oiling (northwest margin and east end.)

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

This site has diverse marsh breeding habitat for a variety of birds including the threatened black rail and the Suisun song sparrow. It is important also to migratory birds and waterfowl.

This is potential habitat for saltmarsh harvest mouse though there are no recorded collections. Among the rich diversity of plant found here are the rare plants Mason's lileopsis and Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Baylands Nature Preserve	(650) 329-2506	
	Brenda Grewell	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Jerry Karr	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Peter Baye	Exxon Benicia	(707) 745-7568	
		U S Army Corps of Engineers	(415) 744-3322	

2-631 -A Roe Island - Site Strategy

Latitude
38 04 N

Longitude
122 02 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes all of Roe Island.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Very shallow water around island limits access.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This island supports a rich, diverse flora, but its high elevation reduces risk of oil reaching the interior of the island. The prime concern is to exclude oil from entering the tidal channels which lead to the interior. Secondly, deflect oil away from exposed shoreline where oil will be washed on shore. Minimize trampling of shoreline and marsh vegetation: very small rare plants are all along the shoreline.

SITE STRATEGIES

Strategy 2-631.1

(USCG Strategic Objective: 5) Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

Exclude oil from entering tidal channel and penetrating interior of island.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Exclude oil from tidal channel at Northeast margin by chevron exclusion boom. Use 500' swamp (river) boom backed with sorbent boom. Water in this area is very shallow: airboat, hovercraft or booming on very high tides will be necessary.

Strategy 2-631.2

(USCG Strategic Objective: 7) Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

Deflect booming at west end of island.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deflection Booming: Deploy 3000 of harbor boom in a chevron near the west end to protect vulnerable and sensitive sites at the western end of the island by deflecting oil past the island to north and south. Use heavy anchors (75 lbs.) Deploy boom as close to island as possible: there is a relatively deep channel close to the west tip.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-631.1	3000	500		3/12+/danforths .	100	0/1			airboat or hovercraft & stakes.	9-12		5
2-631.2	3000			7/75+/danforth + 20 heavy chain		3/1				11	2	7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Access site only by water. Roe Island is located in Suisun Bay north of the USN Concord Naval Weapons Station and is USN property.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
none, access by boat & foot traffic

WATER LOGISTICS:

Access limitations: depth, obstructions: very shallow water at NW and E

Boat Launching, Loading, Docking Launching at Martinez, Benicia and McAvoy-Harris' Marinas in Bay Point , with boat services.
and Services Available: Launch only at Tosco - Pacheco Creek and Concord Navel Weapons Station (tug wharf) by consent only.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:







Deploy from Martinez Marina, Benicia Marina or from McAvoy/Harris' Yacht at Bay Point (West Pittsburg) depending on the zone of impacts and response activity.

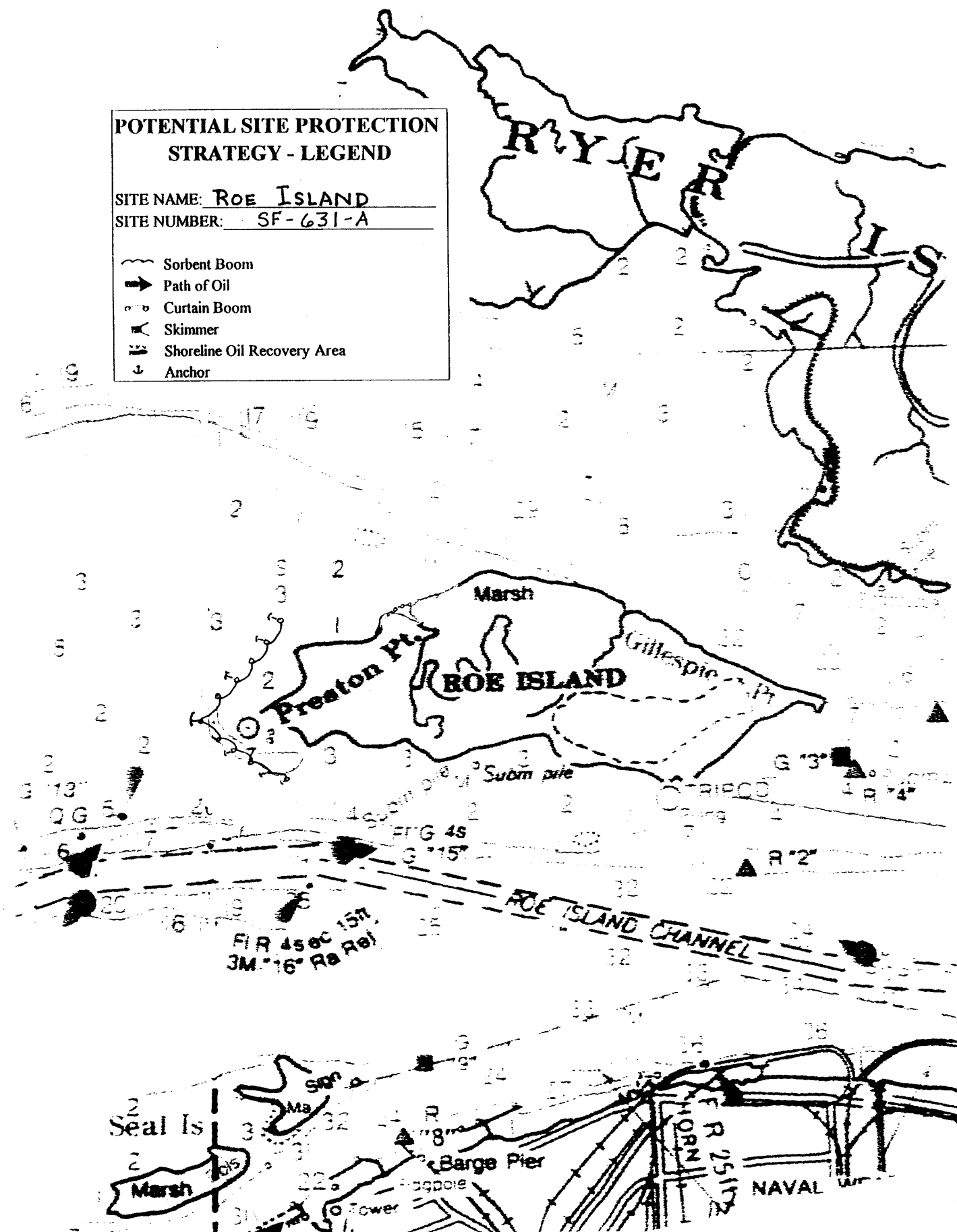
COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

SITE NAME: ROE ISLAND
SITE NUMBER: SF-631-A

SITE NUMBER: SF-631-A

-  Sorbent Boom
-  Path of Oil
-  Curtain Boom
-  Skimmer
-  Shoreline Oil Recovery Area
-  Anchor



This Page Intentionally Left Blank

Ryer Island - Site Summary

2-632 -A

County: Solano
USGS: Vine Hill

GRP: Latitude 38 05 N Longitude 122 02 W
OSPR Map: Last ACP Update

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes all of Ryer Island and is a property of the US Navy. This marshy island in Suisun Bay is divided in two parts by a channel. The western end of the island is a high tidal marsh and supports a rich diversity of native marsh plants. It has never been diked or channelized.

The eastern threefourths of the island was once diked, and the interior of the island subsided. The dikes are now broken in several places, and because of the subsidence, strong tidal currents fill and empty the interior with every tide. This eastern portion is a flooded maze of tule pockets and channels with a large deep channel running east-west. The outer perimeter of the island has a complicated shoreline of small marshy islands and barrow channels. The westerly-most tip is wave eroded and is used occasionally as a haulout by harbor seals. There are mature trees on the levees particularly at the east end.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marsh is "A" priority all year. Sensitive plant and animal species occur here throughout the year.

RESOURCES AT RISK

HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)

This island has several different habitats which are vulnerable to oil impacts and collateral impacts from response. The west end and the fragmented pieces left when barrow channels were excavated, high marsh habitat. This high marsh is almost undisturbed and uncommon habitat which sustains many native species. The high ground of the levees are upland habitat. The upland sustains shrubs and trees which is uncommon habitat for bird and mammals in the middle of Suisun marsh. Both the high marsh and upland are unlikely to sustain direct oil impacts due to elevation, but are vulnerable at their emergent edges and are vulnerable to trampling, activity and noise disruptions during response. The margins and interior provide extensive emergent marsh. The interior of the east portion is patches of emergent tules and convoluted channels.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The area is important to migratory waterfowl. It is also prime breeding habitat for marsh birds. Threatened black rails, endangered California clapper rails, salt marsh common yellowthroat and Suisun song sparrow occur here. A great diversity of passerines and raptors use this area as winter habitat. There is a full suite of aquatic mammals residing here, including the endangered saltmarsh harvest mouse. Among the rich variety of flora occurring here are rare plants, including Mason's lileopsis and Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Dr. Naill McCarten	Botanical Research	(510) 841-8145	
T/B	Kathy Hieb	Ca Dept of Fish and Game, Bay/Delta	(209) 942-6078	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
T/E/L	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
TB	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
B	Diane Kopec	Earth Island Institue (seals)		
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-632 -A Ryer Island - Site Strategy

County: Solano

CHART: 18656 Suisun Bay

Latitude
38 05 N

Longitude
122 02 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes all of Ryer Island and is a property of the US Navy.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are extreme shallows and obstructions around these islands.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

The main concern is the potential for oil to be carried into the interior of eastern Ryer Island: There is a strong flood flow into the island through openings on the north, the south, the east and the west. The north opening and west opening are most likely to have oil entries. Also of concern is the oiling of the emergent vegetation on the margins and surrounding small islands: closing sloughs and openings will reduce the amount of marsh exposed. There are rare plants and threatened species here; so avoid trampling vegetation and trampling oil into sediments.

SITE STRATEGIES

Strategy 2-632.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

Exclude oil from entering east section of Island through levee breaks and penetrating the west section interior via tidal inlets.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

On east Ryer Island are four major openings and plus some smaller inlets. Most require very shallow operations.

1) North off Suisun Cut: Use chevron configuration (400' 9X9+ Hboom with anchors) to exclude oil from a large gap in the levee.

There are four narrow opening to the east of the break, each requiring 20' of 4X4+ and stakes. 400' sorbent.

2) West end: Exclude oil from small opening using 20'4X4+ and stakes and in the larger channel, 350' 9X9+ Hboom in a chevron anchored in place. Just to the south of that location is an opening between along-shore islands, which requires 100' 4X4 river (swamp) boom staked in place. All require very shallow operations. 350' sorbent.

3) South shore - a wide funnel opening fronted with pilings and submerged pilings: 500' 9X9+ Hboom with anchors to keep boom off the pilings. 200' sorbent

4) East end: exclude oil by closure of four openings through outer fringe islands using 500' 9x9+ and 200' of 4X4+ boom using mid channel anchors on large openings: 300, 200, 150, and 50. 600' sorbent.

On west Ryer Island are four tidal inlets. These require extremely shallow operations.

5) Near the northwest tip is a funnel mouth slough: 200' 4X4+ swamp (river) boom staked in place 100' sorbent.

6) at the cross island cut and just to the west are three sloughs: each requiring 50' of 4X4+ boom. 150' sorbent.

The cross cut island cut may need booming at one or both ends: 50' of 4X4+ at the south and 200' of 9X9 at the north end. 200' sorbent.

Strategy 2-632.2

(USCG Strategic Objective: 7)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

Deflect oil away from seal haulout at northwest tip.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

deflect oil past north west tip using 400' of 9X9+ Hboom. At least four heavy anchors will be necessary to hold the boom in position in this wave washed area.

Strategy 2-632.3

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
05/17/1999 01/01/2000

Objective or Prevention Condition

Reducing south shore impacts by closing barrow channel inlets.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Closing barrow channel inlets can reduce oil exposure to the south margin by about 1/2. If oil is likely to impact south side of Ryer Island, close openings to barrow channels. 3000' 4x4+ boom with stakes and occasional anchors.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-632.1	1900	900		10/22+/danforhts & 80 stakes	2000	3/3		very shallow draft boats	15-18	2	5
2-632.2	400			4/22+/danforhts + 20'+ chain					3		7
2-632.3		3000		5/12+/ anchors + 40 stakes		1/1		boats - very shallow draft	4	daily checks	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no land access. By water, Ryer Island is located about a mile north of the Naval Weapons Stations piers in Suisun Bay. The Island is about six miles northeast from Martinez and about four miles northwest from McAvoy's.

LAND ACCESS LEVEL: foot traffic only and very difficult

WATER LOGISTICS:

Access limitations: depth, obstructions: channels and north margins are deep; shallow & obstructions

Boat Launching, Loading, Docking and Services Available: Nearest launch is McAvoy's (4 miles) or Martinez -Benicia (7 miles). All have good services.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Either Martinez, Benicia, or McAvoy's (Bay Point) have good facilities for field outposts. All have good support and security potential.

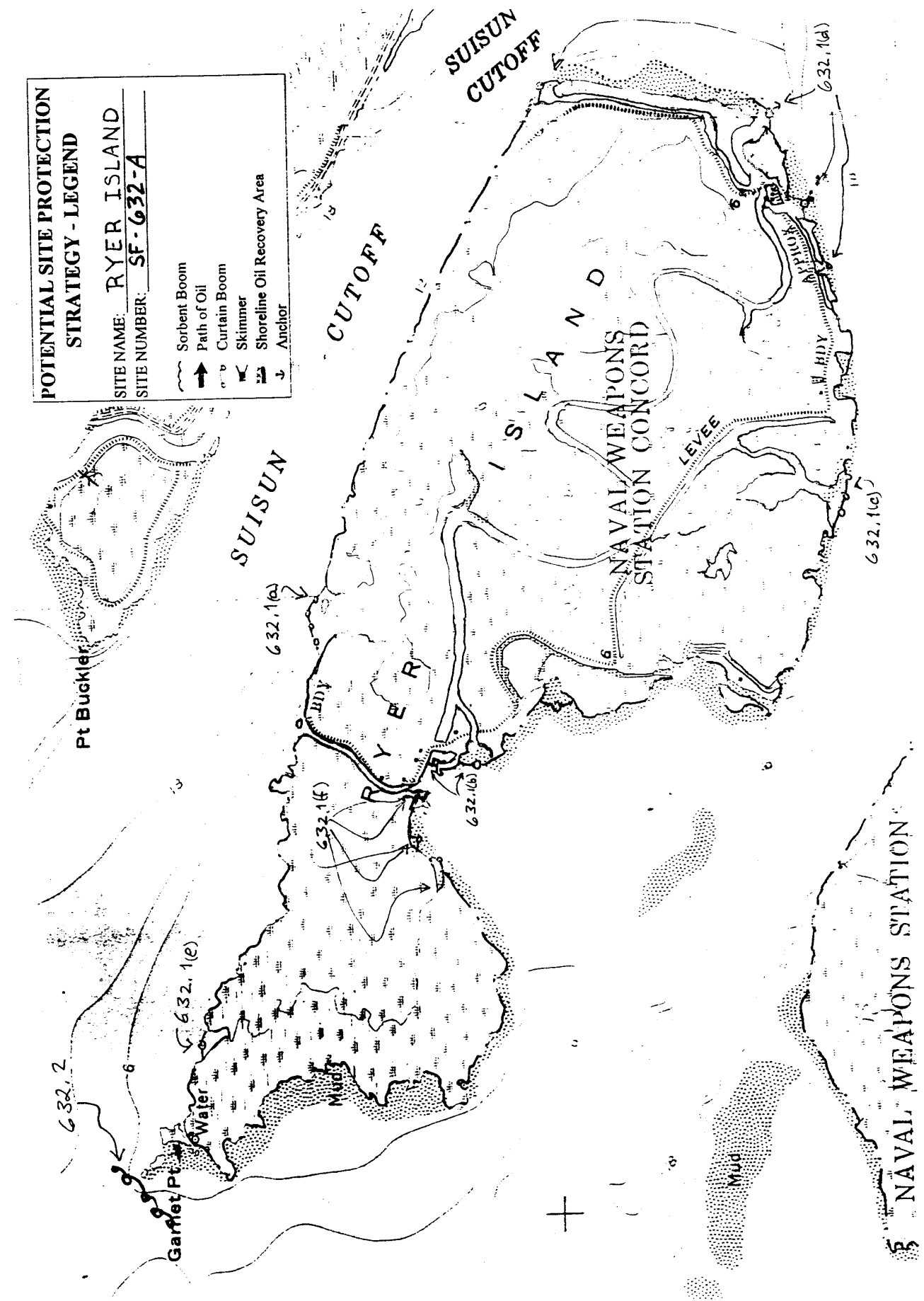
Martinez has widest variety of support services.

COMMUNICATIONS LIMITATIONS / PROBLEMS: ☒ No Problems Radio Pager Cell phone

**POTENTIAL SITE PROTECTION
STRATEGY - LEGEND**

SITE NAME: RYER ISLAND
 SITE NUMBER: SF-632-A

	Sorbent Boom
	Path of Oil
	Curtain Boom
	Skimmer
	Shoreline Oil Recovery Area
	Anchor



This Page Intentionally Left Blank

Middle Ground Island - Site Summary

2-633 -A

County: Solano
USGS: Honker Bay

GRP: 6 Latitude 38 03.7 N Longitude 121 59 W
OSPR Map: 148 Last ACP Update 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site is an island in the middle of Suisun Bay between Roe Island and Chipps Island. It is Concord Naval Weapons Station Property. This low island is surrounded by marshy margins. It is the east tip of a long mud shoal named Middle Ground. The west and north side have extremely shallow waters. The south side along the main channel has pilings. The east tip is wave-washed beach.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

All marshes have A-protection priority at all times.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This is a sandy/mud emerging bar with extensive tule margins on west and east which are suitable for marsh birds and waterfowl. Its size and isolation result in transient use for many species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The marshy margins are prime marsh bird and waterfowl habitat. No sensitive bird species have been recorded here.

The emergent marshes here are typical tule-sedge mix.

Several sensitive plants may occur here: Mason's lilaeopsis, Suisun marsh aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Phillis Faber			
B	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
EL	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
BLE	Paul Rankin	Concord Navel W.S. - Environmental	(925) 246-5674	(510) 246-5174
TB	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	

2-633 -A Middle Ground Island - Site Strategy

County: Solano

CHART: SUISUN BAY 18656/18657/18658

Latitude
38 03.7 N

Longitude
121 59 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site is an island in the middle of Suisun Bay between Roe Island and Chipps Island. It is Concord Naval Weapons Station Property.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

The south side has pilings and submerged pilings. The north and west side are extremely shallow: the island is the emergent tip of a shallow mud bar.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Oiling of emergent marsh is primary concern. Responders should avoid trampling vegetation because rare plant species are present. Avoid trampling oil into sediments.

SITE STRATEGIES

Strategy 2-633.1

(USCG Strategic Objective: 7)

Dates: SISRS Approved last tested ACP date
07/01/1997 09/04/1997

Objective or Prevention Condition

If oil is threatening from the west and likely to impact, deploy deflection boom to the SW from island.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy 1500'8X8+ deflection boom SW from the island with a slight deflection to move oil past island and back into channel.

Strategy 2-633.2

(USCG Strategic Objective: 7)

Dates: SISRS Approved last tested ACP date
07/01/1997 09/04/1997

Objective or Prevention Condition

If oil is approaching from NW, deflect oil away from shoreline and into channel to north.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy 1500'4X4+ north and northeast to deflect oil past island and back into north channel. Stake and anchor in place. This area is extremely shallow and only very shallow draft vessels can deploy here and deployment should be scheduled for high tides.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-633.1	1500			4/22#+ danforths & chain		3/2				13 PERSONS	freq checks	7
2-633.2	1500			4/12+/danforths & stakes		1/2				7 PERSONS	frequent checks	7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no land access. Water access only: the site is one mile northwest from McAvoy's Marina at channel marker G 21.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
no land access. foot traffic at site only.

WATER LOGISTICS:

Access limitations: depth, obstructions: Extreme shallows. Beware of pilings.

Boat Launching, Loading, Docking McAvoy/Harris Marina at Bay Point is immediately to the east. iMartinez Marina (9 mi. W).
and Services Available: Pittsburg Marina (6 mi. E).

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Pittsburg, Martinez or McAvoy's marinas. McAvoy's is possible field post, as well as a resupply point. All manner of facilities, except housing, are available. Area can be secured.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


5
FREEMAN
TSL


**POTENTIAL SITE PROTECTION
STRATEGY - LEGEND**


**MIDDLE GROUND
ISLAND**


SITE NAME: ISLAND


SITE NUMBER: 2-633-A


 Sorbent Boom


 Path of Oil

 Curtain Boom

 Skimmer

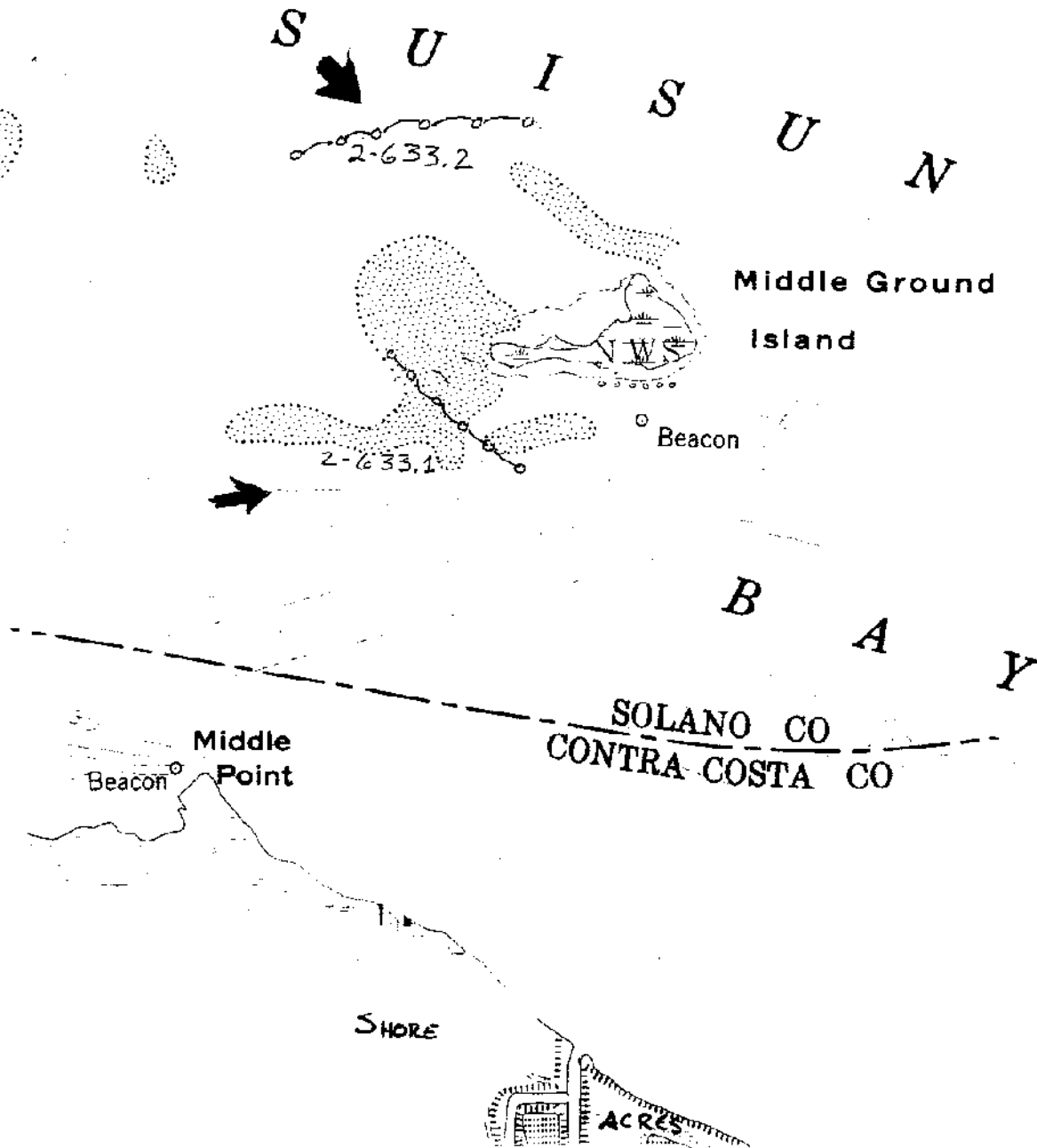
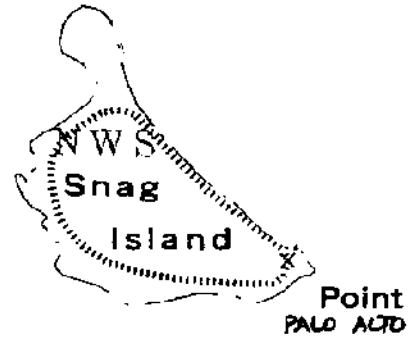
 Shoreline Oil Recovery

 Area

 ANCHOR

NO SCALE

CE3



This Page Intentionally Left Blank

Southampton Bay - Site Summary

2-651

-A

County: Solano
USGS: Benicia

GRP: Latitude 38 04 N Longitude 122 11 W
OSPR Map: Last ACP Update

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

The site extends from Dillon Point to the unnamed point (with dwellings) just west of Commodore Jones Point. Southampton Bay is shallow bay with a large mudflat and wetland, open on the south to Carquinez Strait.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marshes are an "A" priority all year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This is a large tidal marsh (20+ acres) fed by a stream from land and a tidal slough. The marsh is saltmarsh in the front and freshwater marsh in the rear. There is high ground around the margins. The entire marshfront has extensive mudflats which are exposed for a hundred+ yards at lower tides.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The marshes are habitat for the endangered California clapper rail, the threatened California black rail, and probably the endangered salt marsh harvest mouse.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
L	City Of Benicia			
B	Phillis Faber			
ELBO	Park HQ	Benicia State Recreation Area	(707) 938-1519	
E	DISPATCH	CA DEPT OF PARKS AND RECREATION	(408) 649-2810	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
B	Jerry Karr	Exxon Oil	(707) 745-7568	

2-651 -A Southampton Bay - Site Strategy

County: Solano

CHART: 18656 Suisun Bay

Latitude
38 04 N

Longitude
122 11 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

The site extends from Dillon Point to the unnamed point (with dwellings) just west of Commodore Jones Point.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

The bay is extremely shallow at its margins and recesses. There is a remnant of an old dike extending from the land to the east side of the bay (near the dwellings).

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This very shallow bay has extensive sensitive marshy shoreline, which if oiled, would be nearly impossible to clean or rehabilitate. The intent is to keep oil out of the bay by deflection or, failing that, by exclusion/protection booming. Respond in shallows only at high tide with very shallow boats or airboat/hovercraft. Avoid trampling vegetation and beware of trampling oil into muds. This is a state park.

SITE STRATEGIES

Strategy 2-651.1

(USCG Strategic Objective: 7) Dates: SISRS Approved last tested ACP date

Objective or Prevention Condition

Deflect boom past the site on the current contour line.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deflection Booming: To keep oil in the main channel where it is accessible to the skimmers, deploy 1200 ft of deflection boom extending easterly along the 20 foot isobath from Dillon Point to deflect oil away from Southampton Bay and back into Carquinez Strait on the flood tide. Deflection boom should also be deployed to the east of Southampton Bay to deflect oil away from the Bay and into Carquinez Strait during the ebb tide. Benicia Point appears to be a logical location from this boom. Recommended 600 ft of boom be deployed along the southeast side of the islands off this point and extend 600 ft northwesterly (285-T) from Daymark #23 along the

Strategy 2-651.2

(USCG Strategic Objective: 8) Dates: SISRS Approved last tested ACP date

Objective or Prevention Condition

Protective booming of marshy exposure

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Protective Booming: The main focus of protection should be the inner marsh. Deploying sorbent boom deep into Southampton Bay with shallow water craft may be an option to protect the inner marsh. An alternate strategy would be to deploy exclusion boom between the vicinity of Dillon Point and the eastern shore of Southampton Bay. It is estimated that 3,200 to 5,000 ft of boom would be required to exclude oil from the wetlands of Southampton Bay. A strategy for deployment of exclusion boom can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California (Hayes and Montello, 1994)

Strategy 2-651.3

(USCG Strategic Objective: 6) Dates: SISRS Approved last tested ACP date

Objective or Prevention Condition

Shoreline containment and recovery

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Shoreline Containment and Recovery: The small cove immediately west of Dillon Pt. Appears to be a potential containment and recovery site. Oil and debris on the gravel beach indicate it is a natural collection point and there is vehicle access to the beach. To assist natural collection at this point, 300 ft of deflection boom extending westerly from Dillon Pt. (Daymark #21) during the flood tide or easterly from the small unnamed point approximately 1000 ft west on the ebb may be beneficial. These short lengths of boom should be set so as to direct oil into the cove. Oil may be recovered from the water with an oil-mop skimmer and pumped to a fast tank on

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-651.1	1200			3/22+/danforths + chain		2/1				8	daily checks	7
2-651.2			5000	6/22+/danforths + chain & stakes	3000	3/2			Bboats: very shallow draft	13	2	8
2-651.3	300			2/22+/danforth + chain		1/1	portable &		1	4	skimming crew	6

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

By boat, proceed 3 miles west from Martinez Marina. By land, take the Columbus Parkway Exit off Hwy 780 and drive into Southampton Bay State Park on the south side of the freeway.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
paved road around perimeter. Foot only in marsh.

WATER LOGISTICS:

Access limitations: depth, obstructions: Extremely shallow and obstructions

Boat Launching, Loading, Docking Nearest launch is at Benicia public ramp 1/4 th mile east. Launch, fuel, boat services, moorage
and Services Available: at nearby marinas at Martinez, Benicia, Crockett.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

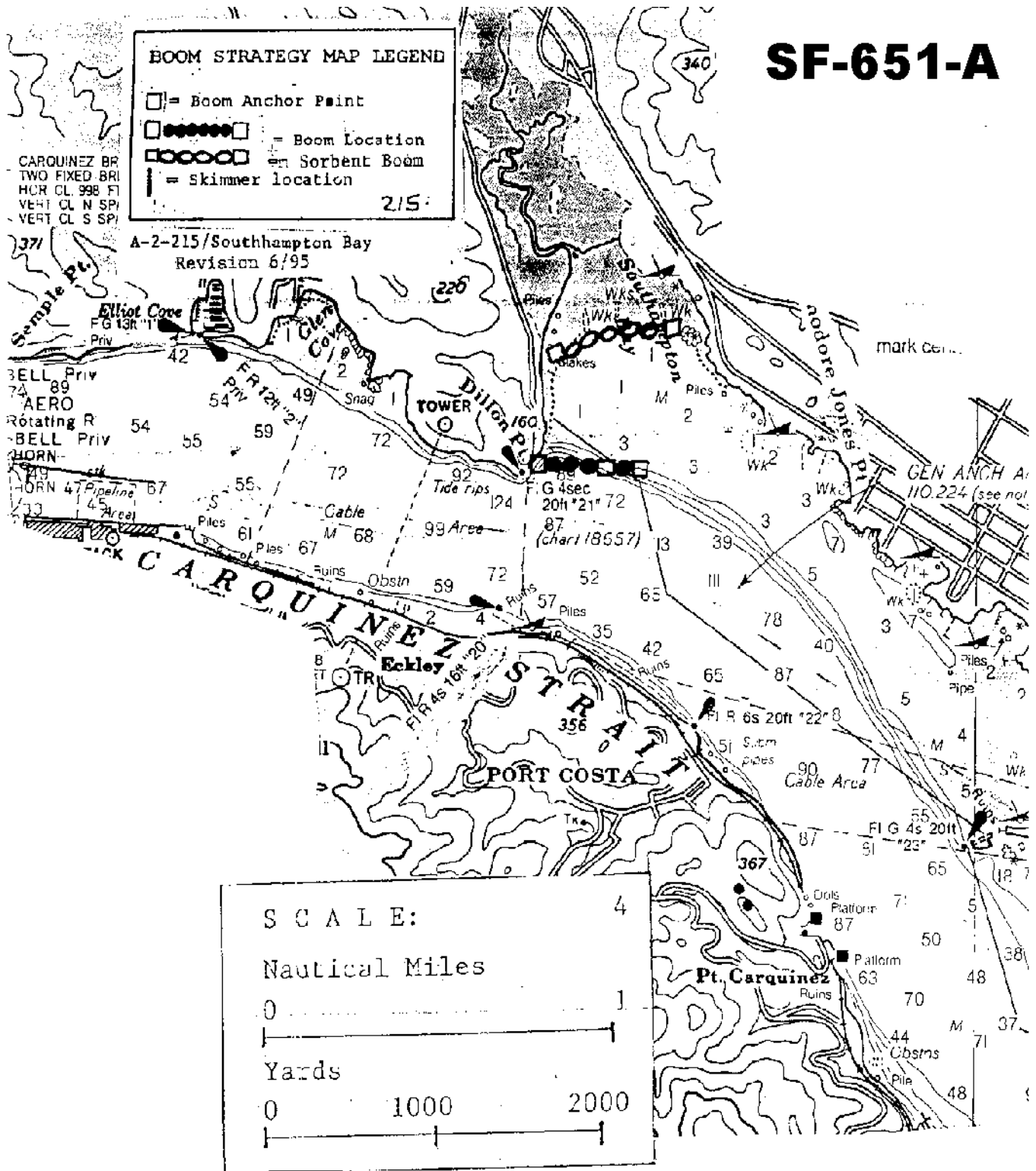
Staging locales: on-site at Dillon Pt, or Benicia public boat ramp. Staging areas at Benicia, Martinez, Exxon Wharf. Support services: lodging and food available at Martinez or Benicia.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

☒ No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

SF-651-A



This Page Intentionally Left Blank

Benicia Marsh - Site Summary

2-652 -A

County: Solano
USGS: Benicia

GRP: 6 Latitude 38 02.7 N Longitude 122 09.7 W
OSPR Map: 146 Last ACP Update 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site begins at the foot First Street, Benicia, and continues to the east to the Benicia Warf. This is a small pickleweed marsh with several small tidal inlets which are mostly obstructed with vegetation. Tidal prism is small. The front of the marsh has a beach berm which separates the marsh behind from all but highest tides. The marsh front is sedge mix; the main marsh is saltgrass and pickleweed.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

Marshy areas have A-protection priority at all times.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

The outer marsh margin is a storm berm which has mostly sedges and rushes. The back marsh is mostly pickleweed with saltgrass.

The outer margin is a combination of wave-washed eroded shoreline and pocket beaches. About half the shoreline has shallow tidal flats, particularly the east half.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The marshy margins and inner marsh are habitat for marsh bird and waterfowl year-round. Suisun song sparrow and Suisun common yellowthroat have been found in this vicinity.

Typical semi-aquatic marsh mammals use this area. Saltmarsh harvest mouse may occur here.

The emergent marshes here are typical mostly sedge/rush mix. High marsh is saltgrass and pickleweed marsh. Sensitive plants may occur here: Suisun marsh aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

This is the historic Benicia waterfront.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
LE	City Of Benicia			
B	Phillis Faber			
B	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
LE	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	

2-652 -A Benicia Marsh - Site Strategy

County: Solano

CHART: SUISUN BAY 18657/18652

Latitude
38 02.7 N

Longitude
122 09.7 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site begins at the foot First Street, Benicia, and continues to the east to the Benicia Warf.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

This shoreline is shallow and has obstructions.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Primary concern is transport of oil to inner marsh and oiling of emergent marsh front. The strategy is to close the few small tidal inlets. If oil is crowded along shore, the marsh front may need protective booming or be used to collect at the designated locales. Avoid trampling marsh vegetation or tracking oil into marsh front or sediments.

SITE STRATEGIES

Strategy 2-652.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If oil is threatening, exclusion boom tidal inlets.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

There are a half dozen small, low current tidal inlets. Each can be closed by staking 10' or 20' boom segments with sorbant backing deployed by a team on foot from land or water. There is also a tide gate on the east Benicia Marina channel bulkhead which must be closed to exclude oil from the marsh to the east. An alternative measure is to close tidal inlets with fill (which requires notification of BDCD and US Corps Engineers).

Strategy 2-652.2

(USCG Strategic Objective: 6)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If oil is near shore due to spill origin or wind, this is a good area for diversion to shore for capture and recovery.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

There are good shore capture points at 1st St, E 5th St, and at E 6th St (inside industrial property) Deploy multiple layers of 1000'4X4+ at an angle to shore to ground the oil and collect using land skimming units. There is an artificial embayment at E 6th with a road, which makes this an excellent site for diversion and collection. East 5th St has a large warf (tug warf). East 1st St has paved access to water, closer proximity to currents, shallower anchorage on reef.

Strategy 2-652.3

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If there is heavy or continuous re-oiling, protective boom marshfront with light boom and sorbent.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Set 4X4+ boom and sorbant boom as close to marshfront as possible with available shallow draft vessels. Stake and anchor in place.

This strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-652.1	150			stakes	150				2 PERSONS	occasional checks	5
2-652.2	2000			4/12+/danforhts and stakes	1/1		portable & VT	1 Bboats: very shallow draft	6PERSONS	check + skimming	6
2-652.3	5000			8/22+/danforhts & stakes	1000	2/1		Bboat: very shallow draft	8	regular inspections	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is land access from I-780: exit at either East 5th Street and proceed to Bay or exit at East 2nd Street and proceed via First Street to bay front. Water access: the site is on both sides of the Benicia Marina breakwater across from Martinez Marina.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES AT ACCESS POINTS, ELSE FOOT

WATER LOGISTICS:

Access limitations: depth, obstructions: SHALLOW DRAFT AT SHORE

Boat Launching, Loading, Docking Benicia Marina on site. Martinez Marina (1 mi. S).

and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

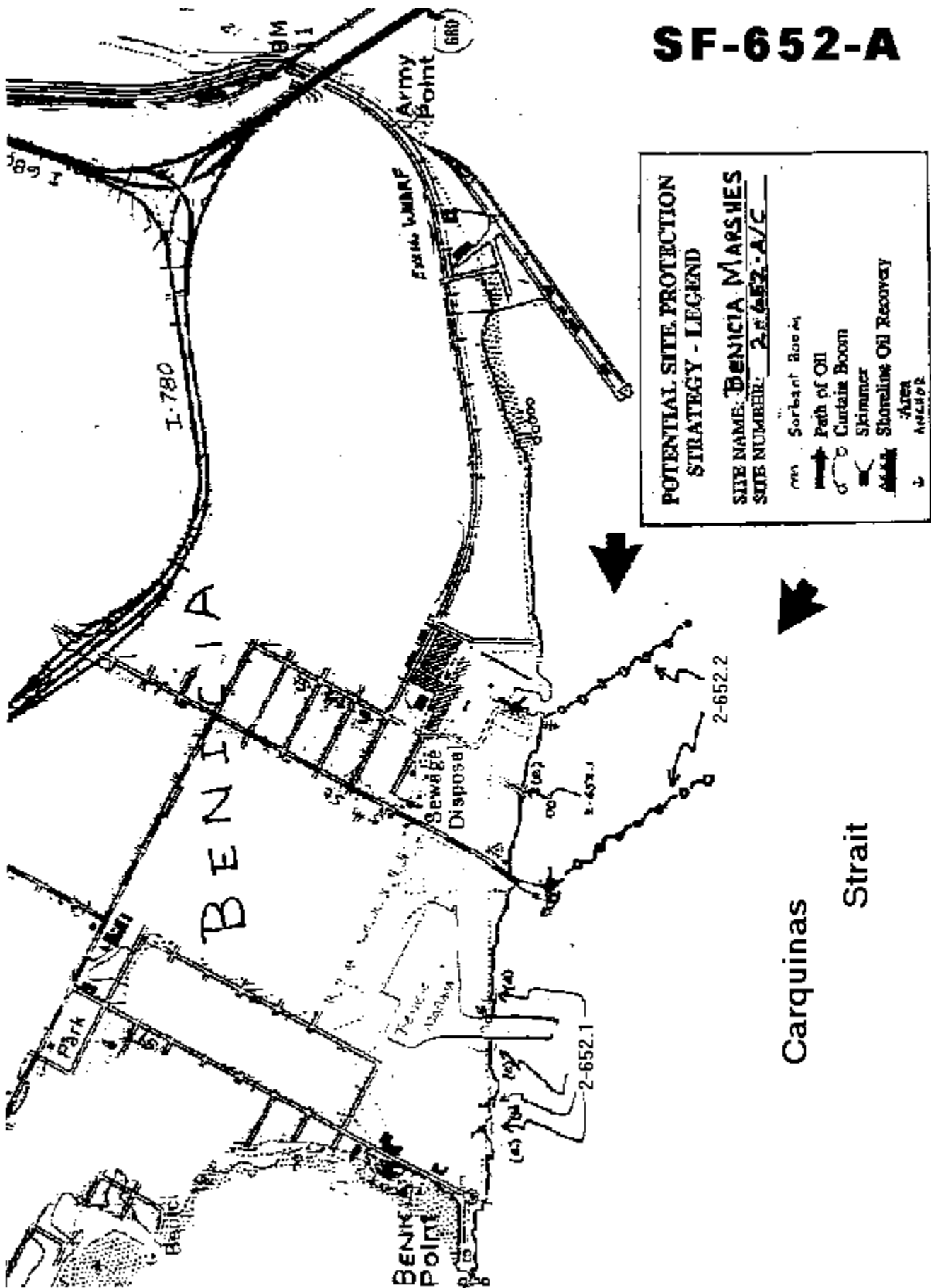
Stage at Martinez Marina, Benicia Marina or Benicia wharf. Full services are available in both communities.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

No Problems X Radio X Pager X Cell phone

ADDITIONAL COMMENTS

SF-652-A



Carquinas Strait

This Page Intentionally Left Blank

Goodyear Marsh - Site Summary

2-654

-A

County: Solano
USGS: Benicia/Vine Hill

GRP: 6 Latitude 38 04 N Longitude 122 07 W
OSPR Map: 146 Last ACP Update 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site begins near the Benicia Bridge and continues to Suisun Slough. This site is a partially diked wetland with an encroaching emergent tule marsh on its bayward margin. The most of marsh behind the levee is a California State wildlife refuge (part of Grizzley Island Wildlife Refuge system), and is a combination of pickleweed and tule/sedge. The historic levee is open at several locations, and one creek, Sulfur Springs Creek, flows through it from the industrial park inland. The accreting marshfront is extremely shallow and is a successional cline from mudflats to tule marsh.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

This marsh has A level protection priority at all times.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This marsh has high priority at all times. The foremost concern is spread of oil to the inner high marsh though tidal channels and Sulfur Springs Creek. Oiling of the emergent marsh margin and frontage is of similar importance.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Waterfowl, shorebirds and marsh birds use this area for breeding and feeding and wintering, and the site is managed as a waterfowl refuge. Bird Sensitive Species include threatened black rail, endangered California clapper rail, Suisun common yellowthroat and Suisun song sparrow.

The endangered Saltmarsh harvest mouse and a wide variety of semi-aquatic mammals occur here including: muskrat, beaver, mink, river otter, raccoon.

Special Status plant species occurring here include Suisun marsh aster and Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	John Takekawa		(707) 557-9880	
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
	Jerry Karr	Exxon Oil	(707) 745-7568	
	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-654 -A Goodyear Marsh - Site Strategy

County: Solano

CHART: SUISUN BAY 18657/18652

Latitude
38 04 N

Longitude
122 07 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site begins near the Benicia Bridge and continues to Suisun Slough.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site:

The marsh is fronted by very shallow mudflats.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This is a very sensitive site with endangered species. Because of the shallows and great sensitivity it will be extremely difficult to cleanup or rehabilitate. The two main concerns are oiling of the inner marsh via Sulfur Springs Creek and openings to inner sloughs. The more difficult problem is oiling and cleanup disturbance of the marshy margin. Avoid trampling marsh vegetation or tracking oil into marsh and sediments.

SITE STRATEGIES

Strategy 2-654.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If oiling is likely, close all tidal sloughs and Sulfur Springs Creek to keep oil out of marsh.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Stake and anchor 100'4X4 boom in chevron at mouth of Sulfur Springs Creek. Stake/anchor boom similarly across all entries. Back with sorbent boom.

Strategy 2-654.2

(USCG Strategic Objective: 6)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If heavy oiling/reoiling is a threat on incoming tide with a southerly wind, intercept along shore oil and direct to collection.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Divert moving oil to collection skimming. Deploy boom to drive oil to shore collection at foot of Benicia Bridge and/or set boom to deflect oil away from shore to main channel to floating skimmer. Repeat at mothball pier as necessary.

Strategy 2-654.3

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If oil continues to threaten marshfront, deploy protective booming as recommended in SF Inlet Study by RPI/MSRC

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

If it appears that foregoing strategies will not keep oil out of wetlands, deploy exclusion booming along marsh front: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). This requires 27,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-654.1	300			1/15#+ anchor and stakes		note			one airboat/hovercraft/shallow boat	2 PERSONS	frequent checks	5
2-654.2	1000	1000		4/22+/danforths + chain & stakes	100	2/2	land/SPS		1/1 Bboats: very shallow draft	13 PERSON	skimming and checks	6
2-654.3		27000		20/12+/danforth & stakes		8/2			Bboats: very shallow draft	28	2x daily check	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is land access from I-680 by exiting at Industrial Park or a Lake Herman and proceeding toward the water. The land access is to a limited exposure of the marsh front. Water access is one mile north east from Benicia or Martinez marinas.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
ALL ON ROADS/PIER. FOOT ONLY OTHERWISE

WATER LOGISTICS:

Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES
Boat Launching, Loading, Docking Benicia and Martinez Marinas (1 mi. to W from site).
and Services Available:

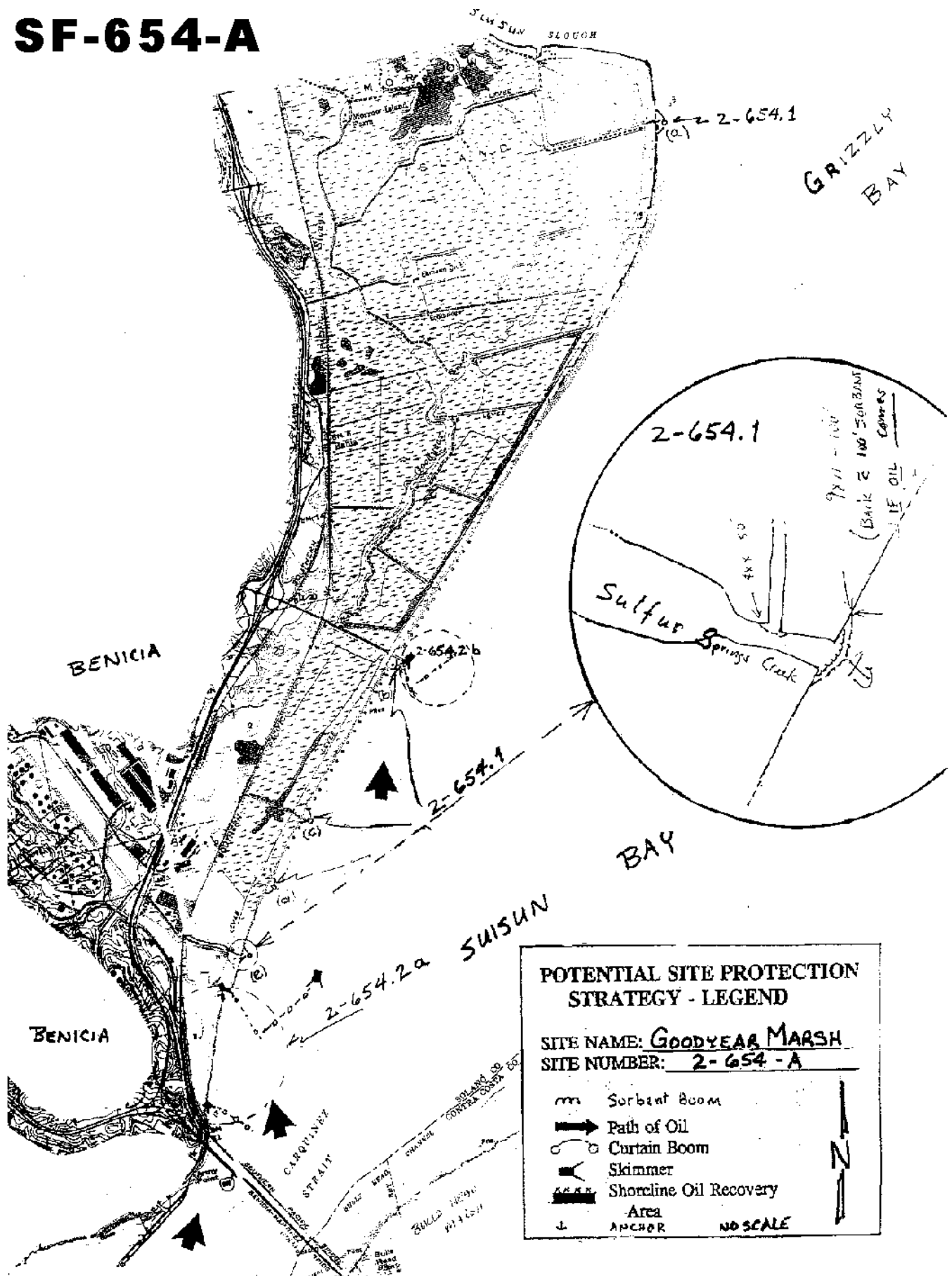
FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Martinez Marina, Benicia Marina or Benicia wharf. The mothball fleet wharf is also an all-service pier with crane. Stage at Martinez Marina, Benicia Marina or Benicia wharf. Full services are available in both communities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

SF-654-A



This Page Intentionally Left Blank

Joice Island, Suisun Slough, and Montezuma Slough - Site Summary

2-655

-A

County: Solano
USGS: Fairfield South, Vine Hill

GRP: Latitude 38 08 N Longitude 122 04 W
OSPR Map: Last ACP Update 01/01/1994

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

Marshes and sloughs on the northeast shore of Grizzly Bay. The southern portions of Joice island are not diked. Numerous channels connect this portion of the island with Grizzly Bay.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marsh is "A" priority all year. The area supports endangered species and is very important to migratory waterfowl.

RESOURCES AT RISK

HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)

The marsh at the tips of Joice and Grizzly Islands is unleveed and in a near natural state. The margins of Montezuma Slough are emergent marsh.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The area is of major importance to migratory waterfowl. Special Status Species include endangered California clapper rail, threatened black rail, Suisun song sparrow, and saltmarsh common yellowthroat.

The saltmarsh harvest mouse is found throughout these marshes.

Several rare plants also live here: delta tule-pea, (Lathyrus jepsonii spp jepsonii), soft bird's beak (Cordylanthus mollis ssp. mollis), and Suisun aster (Aster chilensis var. lentus)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Jerry Karr	Exxon Oil	(707) 745-7568	
	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-655 -A

Joice Island, Suisun Slough, and Montezuma Slough - Site Strategy

County: Solano

CHART: 18656 Suisun Bay

Latitude
38 08 N

Longitude
122 04 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

none identified.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This site has sensitive marsh with small tidal channels leading into the unvegetated marsh. It is also the opening to Suisun Slough and Montezuma Slough which would allow exposure to miles of marsh. The objectives in order of importance are: 1) are to exclude oil from entering the major sloughs, 2) to close the small tidal sloughs near the mouths of the big channels, and 3) to protect exposed margins from oiling. Responders should avoid trampling marsh vegetation and tracking oil into marsh and sediments.

SITE STRATEGIES

Strategy 2-655.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
01/01/1994 01/01/1994

Objective or Prevention Condition

exclude oil from entering Suisun and Montezuma Sloughs by collection booms to SP Skimmers.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Nearshore Recovery: If it appears that oil may enter Suisun Slough or Montezuma Slough deploy skimmers in the mouth of each slough. Approximately 1,100 ft of deflection boom will be required to direct oil to a skimmer deployed in Suisun Slough, and 2,500 feet would be required in Montezuma.

Strategy 2-655.2

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
01/01/1994 01/01/1994

Objective or Prevention Condition

Protect oil from penetrating marshes at mouths of Suisun and Montezuma Sloughs

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Exclusion Booming: If it appears that other strategies will not keep oil out of the wetlands recommend that exclusion boom be deployed along the face of the marsh where feasible. The portion of Joice Island lying between the entrances to Suisun and Montezuma Sloughs is a high priority for such protection. It is estimated that 8,000 to 9,000 ft of exclusion boom will be required to exclude oil from the undiked wetlands at the south end of Joice Island. A strategy for deployment of exclusion boom is illustrated in Potential Oil-spill Protection Strategies for San Francisco Bay, California (Hayes and Montello, 1994)

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-655.1	3600			9/22+/danforth + chain		6/2	SPS	2	12-15		5
2-655.2	9000			15/22+/danforth + chain		10/2			30	2	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

By water, if launching from Benicia, proceed east past the Reserve Fleet and north into Grizzly Bay. From Concord, go northwest past the channel islands into the bay.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
no land access except by foot.

WATER LOGISTICS:

Access limitations: depth, obstructions: none except at margins.

Boat Launching, Loading, Docking launch, fuel, moorage at Benicia & Martinez Marinas. Also some facilities at nearby Pearce's and Services Available: harbor.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best staging at Martinez or Benicia sites.

COMMUNICATIONS LIMITATIONS / PROBLEMS: ☒ No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

SF-655-A

BOOM STRATEGY MAP LEGEND

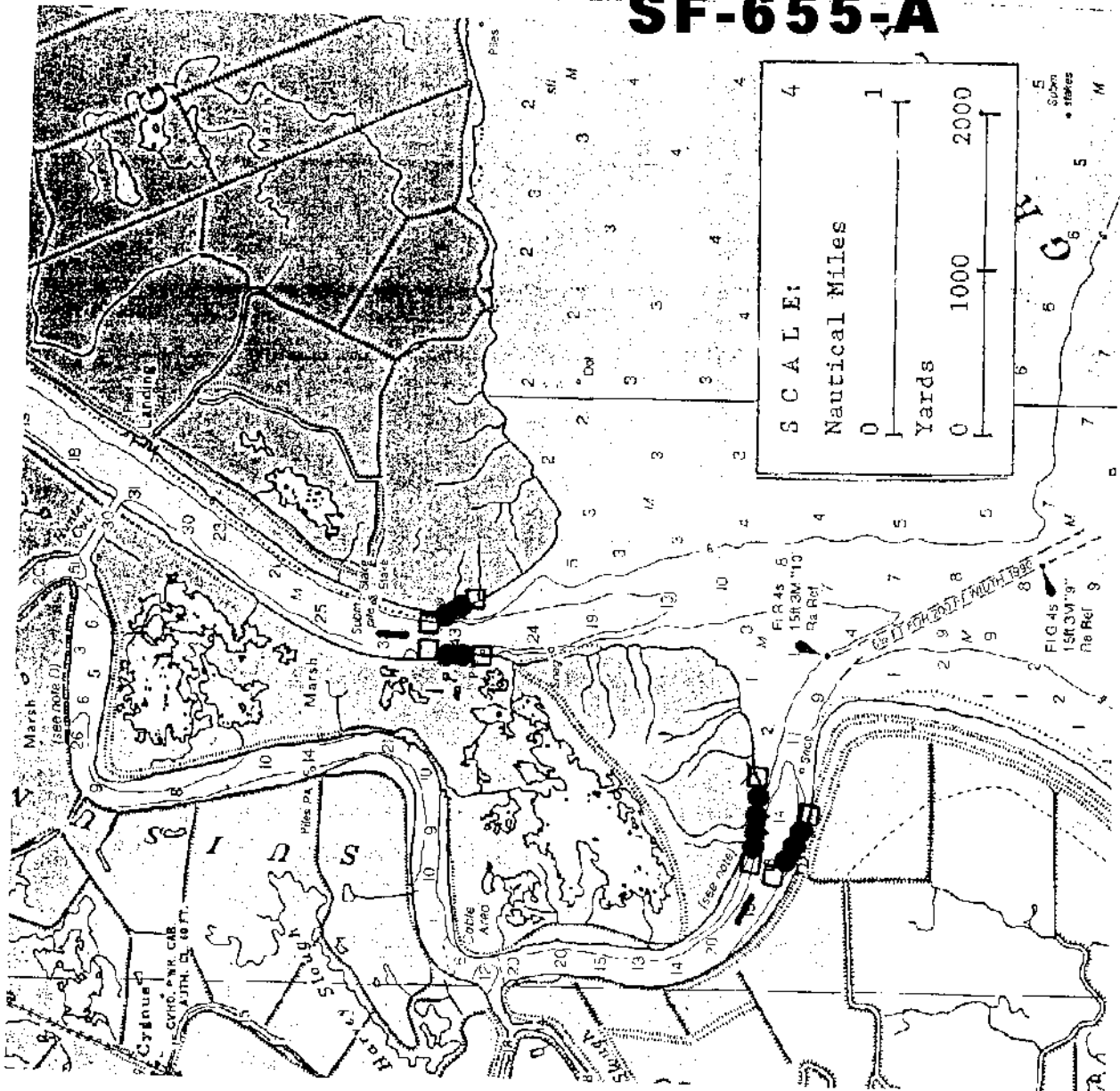
□ = Boom Anchor Point

▣ = Boom Location

— = Skimmer location

216

4-2-216/Joice Island, Suisun Slough & Montezuma Slough



This Page Intentionally Left Blank

Grizzly Bay - Site Summary

2-660

-A

County: Solano
USGS: Fairfield South, Denverton

GRP: Latitude 38 08 N Longitude 122 02 W
OSPR Map: Last ACP Update 01/01/1994

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes all of Grizzley Bay and the shoreline (south edge of Grizzley Island and West shoreline of Simmons Island). There are marshes along all shores of Grizzley Bay. Levees are near the north and south shore. However, along the east shore, the tidal flats are 1000 yds wide and the marsh between the levee and mudflat is 500 yds wide. The shoreline is convoluted and there are many barrow channels. The northeast corner of the bay is a prograding shoreline.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marshes are "A" priority all year. There are thousands of waterfowl on the open waters of Grizzley Bay during the winter.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

There are three habitats of concern. Foremost is the open water of Grizzley Bay which is an important area for waterfowl to raft in during the winter and spring. The margins have three kinds of marsh habitat: prograding marsh which is difficult to clean or rehabilitate, eroding shores, and tidal inlets and barrow channels which have extensive exposure.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The area is of major importance to migratory waterfowl. Grizzley Bay can have over a 100,000 ducks on it at the peak of the wintering period. Waterfowl and marsh birds use the shoreline year-round, including the endangered California clapper rail, the threatened black rail, Suisun song sparrow, and saltmarsh common yellowthroat.

The endangered saltmarsh harvest mouse and the ornate shrew are among the wide variety of mammals found here.

Several rare plants also live here: delta tule-pea, soft bird's beak, Suisun aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Jerry Karr	Exxon Benicia	(707) 745-7568	
	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-660 -A Grizzly Bay - Site Summary

County: Solano

CHART: 18656 Suisun Bay

Latitude
38 08 N

Longitude
122 02 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes all of Grizzley Bay and the shoreline (south edge of Grizzley Island and West shoreline of Simmons Island).

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows along margins.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Numerous inlets penetrate the marsh, and the head of the bay and levees are there 500 to 1000 yards behind the bayward edge of the marsh. There are frequently more than 10,000 ducks on the bay during the winter months. The shallow water and large waves commonly encountered will make this area difficult to protect with current technology.

SITE STRATEGIES

Strategy 2-660.1

(USCG Strategic Objective: 567)

Dates: SISRS Approved last tested ACP date
01/01/1994 01/01/1994

Objective or Prevention Condition

Keep oil in Suisun Cut channel and exclude it from moving across Grizzley Bay.

Technique Details

Check here means " No strategy diagram": () Check here means "Contact CCC": ()

Exclusion Booming: If it appears that other strategies will not keep oil out of the wetlands recommend exclusion booming be deployed across the northeastern shore of Grizzly Bay from Pelican Pt. To the northern shore of the bay. It is estimated that 13,000 ft. of harbor or tidal barrier boom will be required to exclude oil from the wetlands at the head of Grizzly Bay. This strategy for deployment of exclusion boom can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montelo, 1994).

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-660.1	13000			26/22+/danforth + chain		12/2				40		567

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road. Nearest boat access is 3 miles southeast at McAvoy's Marina, Bay Point (8 mi to Martinez, 8 mi to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
seasonal limitations on levees

WATER LOGISTICS:

Access limitations: depth, obstructions: very shallow near shorelines

Boat Launching, Loading, Docking and Services Available: nearest launch is Martinez, Benicia, and McAvoy's; each has fuel, moorage, and repair.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best facilities, staging, field posts are at above marinas.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

☒ No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

SF-660-A

OM STRATEGY MAP LEGEND

- = Boom Anchor Point
- = Boom Location
- = Skimmer location

220

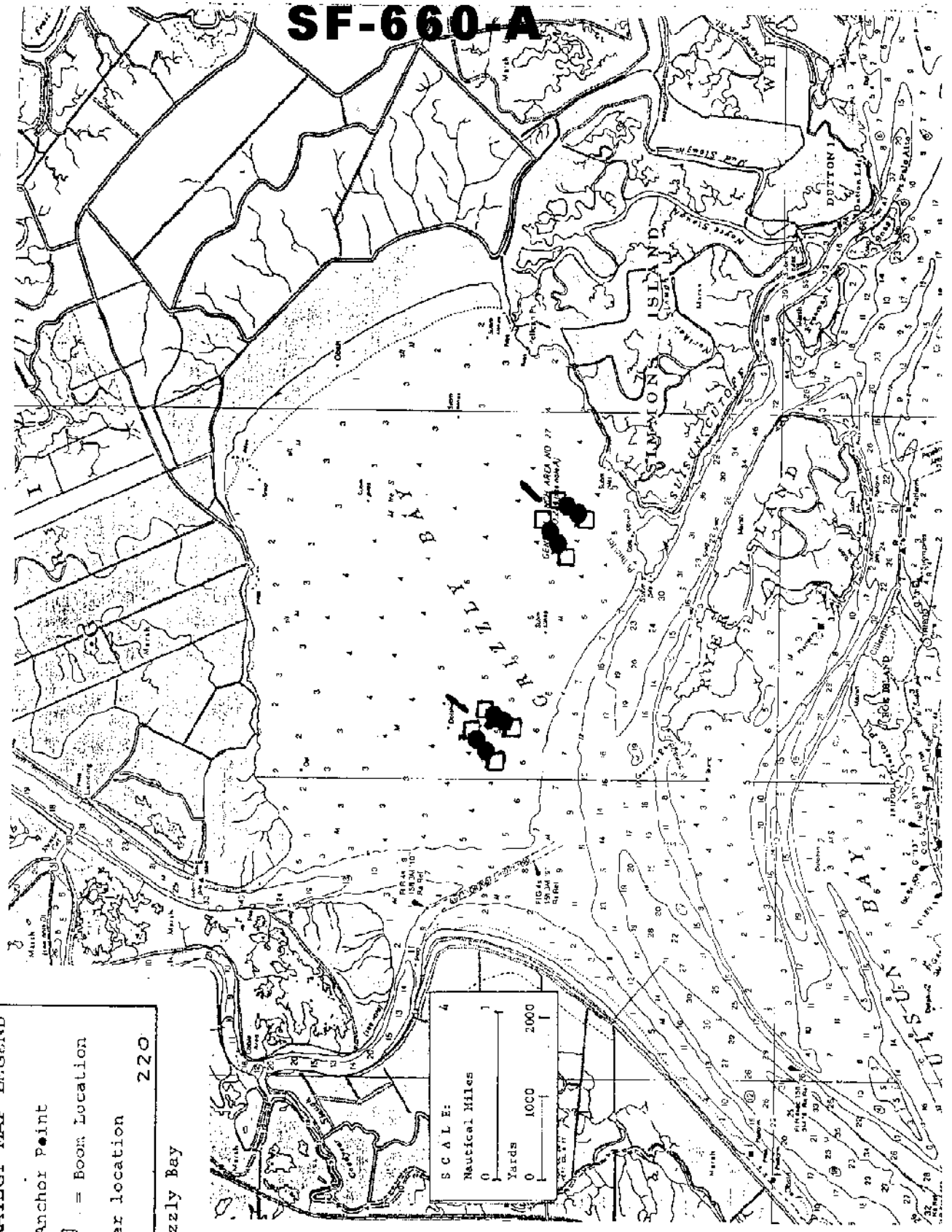
220/Grizzly Bay



SCALE:

Nautical Miles
0 1 2

Yards
0 1000 2000



This Page Intentionally Left Blank

Simmons Island - Site Summary

2-665 -A

County: Solano
USGS: Honker Bay, Vine Hill

GRP: 6 Latitude 38 05.4 N Longitude 122 00 W
OSPR Map: 148 147 Last ACP Update 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes the 4 miles of bay frontage and berm islands of Simmons Island from Noyce Slough on the east to Pt. Buckler and back to Pelican Pt. It is a large diked island which is maintained for duck hunting. On some of the margin there is a barrow channel separating the historic marsh front from the current island levee resulting in extensive marshy margins. Although there is some emergent marsh along the ripped island levee, the outer perimeter is a premium strip of native marsh. The barrow channel is open to the bay at multiple points. The outer bay margin is exposed to tangential wave action resulting in a mildly eroding shore with some accreting margins (particularly the Grizzley Bay Shore). There is a tide gate at Noyce Slough.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

These marshy areas have A-protection priority at all times. Major seasonal concerns are the massive numbers of waterfowl which use this area the winter, and sensitive species of fish and salmonids which seasonally use or pass through this area.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

These marshy margins and berm islands have highest protection priority at all times. Oil must be prevented from entering barrow channels and interior sloughs by exclusion booming. These marshy areas are pristine to excellent habitat for all manner of marsh species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The marshy margins are prime marsh bird and waterfowl habitat including Suisun song sparrow and possibly black rail. This area is heavily used by ducks and other water birds during the wintering season.

These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat. Salt marsh harvest mouse is believed to be present.

Fish using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move through this area: salmon, steel head, green and white sturgeon, striped bass, American shad.

The emergent marshes here are typical tule-sedge mix with some cattail. Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster, and soft bird's beak.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
	Peter Baye	U S Army Corps of Engineers	(415) 744-3322	

2-665 -A Simmons Island - Site Strategy

County: Solano

CHART: SUISUN BAY 18658/18652/18656

Latitude
38 05.4 N

Longitude
122 00 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes the 4 miles of bay frontage and berm islands of Simmons Island from Noyce Slough on the east to Pt. Buckler and back to Pelican Pt.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows and obstructions along shore and inside the barrow channels.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This channel, Suisun Cut, is the major avenue for oil to move to Honker Bay, Spoonbill Creek and island marshes. This is a key location because strategy-.1 is key to excluding oil from vast shorelines at this and other sites. There are marshes along the margins which are also vulnerable but of lesser strategic importance. Responders should always minimize trampling of marsh vegetation and tracking oil into marshes and sediment.

SITE STRATEGIES

Strategy 2-665.1

(USCG Strategic Objective: 5,6) Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

To intercept heavy oil flow through Suisun Cut and protect Honker Bay, divert the oil to collection areas.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Set up shore collection/skimming system either at duck club or dock west of duck club or both. Cascade boom across channel to direct oil toward quite shore waters. Set additional boom at shore to protect shore and trap oil once it is diverted. Currents are severe and channel is deep: heavy chain and long scope will be necessary.

Strategy 2-665.2

(USCG Strategic Objective: 5) Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

Exclude oil from entering barrow channels and slough entrances.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

There are multiple breaks in the south shore. On Suisun Cutoff side, exclude oil from entering side channels by deploying boom across openings (a) 600'+ 8X8+Hboom, (b) 400'+4X4+Hboom/3seg., (c) 300'+4X4+ Hboom/4seg. On the Grizzley Bay side (d), close the through channel (800'+ 4X4+Hboom) and the barrow channel (50' +4X4+ Hboom). (Back with sorbant as necessary). If current is carrying oil out of Suisun Cutoff at Pt Buckler, deploy Hboom (500'8X8+) off Pt to deflect oil back into Suisun Cutoff. Leave trailing ends to shore to insure against shortcircuiting.

Strategy 2-665.3

(USCG Strategic Objective: 5,8) Dates: SISRS Approved last tested ACP date
09/22/1997
07/06/1997 09/22/1997 09/04/1997

Objective or Prevention Condition

Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

If foregoing strategies are inadequate to keep oil off marshy shorelines, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montello, 1994). This would require 6 miles of a combination of intertidal, 8X8+ Hboom, and 4X4+Hboom.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-665.1	3000			15/22#+/danforth and stakes		4/2	portable & VT	2 3500' of line	16 PERSON	frequent checks	5,6
2-665.2	1100	1550		16/22+/danforth + chanin		2/4		very shallow craft, airboat,	15 PERSONS	regular inspection	5
2-665.3	10000	15000		anchors and stakes		10/6		2 hovercraft/airboat; 4 very shallow	44 PERSONS	2 boomtenders	5,8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road. Nearest boat access is 3 miles southeast at McAvoy's Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:

Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR SHORE.

Boat Launching, Loading, Docking McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.
and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

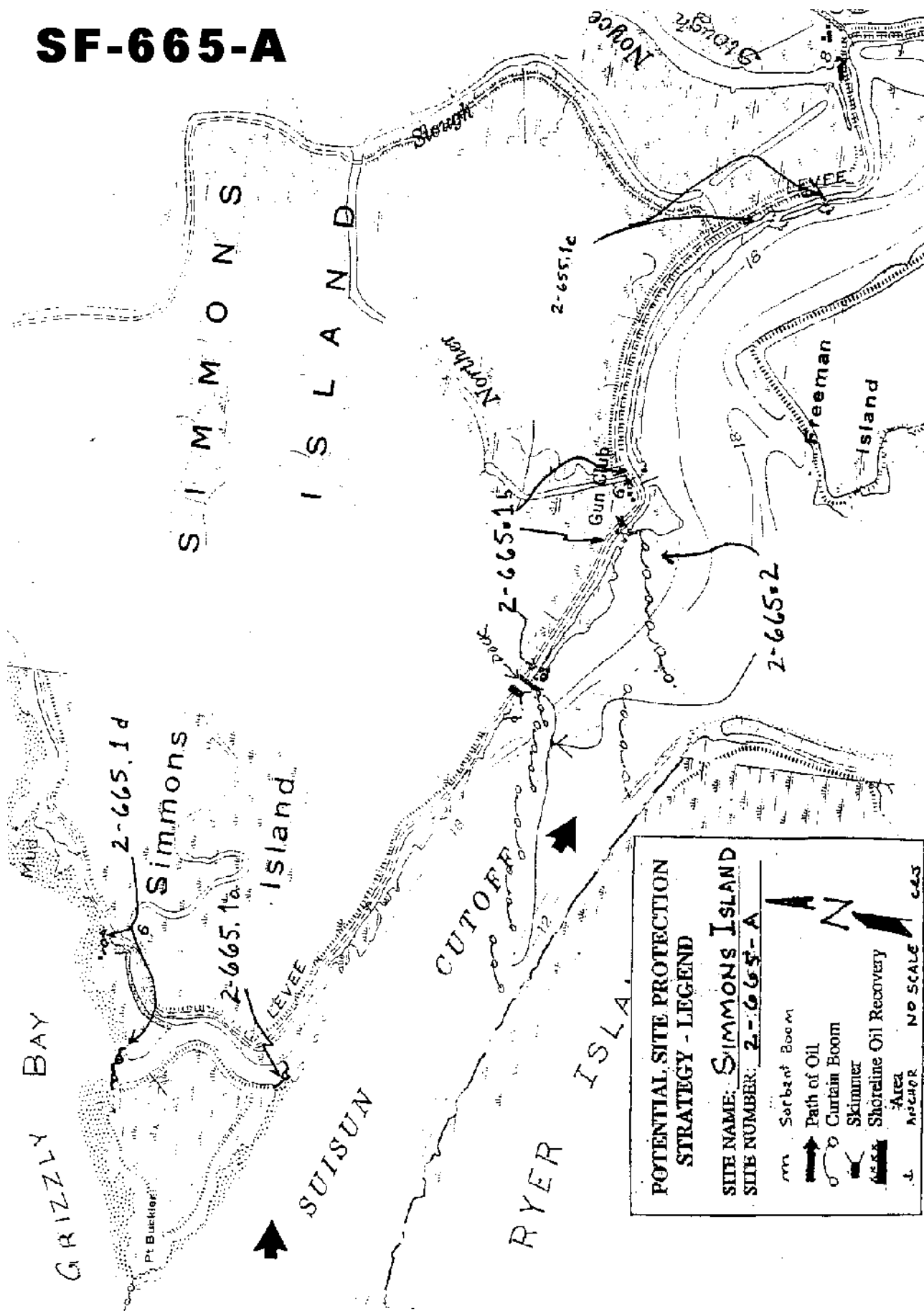
The duck clubs have power and good small boat docking facilities.

Nearest major deployment site/field post is McAvoy's/Harris', full service marinas, or Concord Naval Weapons Station.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

SF-665-A



This Page Intentionally Left Blank

Freeman & Snag Islands - Site Summary

2-667 -A

County: Solano
USGS: Honker Bay

GRP: 6 **Latitude** 38 08.8 N **Longitude** 121 59.5 W
OSPR Map: 148 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes Snag and Freeman Islands which are located just south of Dutton Island and east of Ryer Island in north central Suisun Bay. Both are property of Concord Naval Weapons Station. These two islands have emergent marsh margins. Snag is high marsh with cattails and shrubs. Freeman Island has channels admitting tidal flow to the tule marsh interior and has a convoluted shoreline with many openings.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marshy areas have A-protection priority at all times. Winter is a particularly important time for waterfowl.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

These marshes have highest protection priority at all times. Freeman Island is much more vulnerable than Snag because Freeman is tidal marsh and has multiple channels to the interior and extensive marshy frontage.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

There is extensive marsh bird habitat: Sensitive Species include Suisun Song Sparrow and possibly Black Rail. These islands are inhabited by small semi-aquatic mammals such as river otter, beaver, mink and muskrat. Fish species using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, Winter-run chinook, and major fish stocks move through this area: salmon, steel head, sturgeon, striped bass, American shad.

The emergent marshes here are predominately tule but cattails and sedges are also important. Several sensitive plants occur here: Delta tule pea, Mason's lilaeopsis.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
	Paul Rankin	Concord Navel W.S. - Environmental	(925) 246-5674	(510) 246-5174
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	

2-667 -A Freeman & Snag Islands - Site Strategy

County: Solano

CHART: 18656 Suisun Bay/Roe Island & vicinity

Latitude
38 08.8 N

Longitude
121 59.5 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows and obstructions around and inside the island. Suisun bay can have aggressive waves.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

These island marshes and the endangered plants and animals living there, are very vulnerable to oil damage. Primary concern is penetration of oil into the marsh via tidal channels and secondarily into emergent marsh margins. Responders should minimize trampling of marsh vegetation and avoid tracking oil into marshes and sediments. Small endangered plants and animals are present.

SITE STRATEGIES

Strategy 2-667.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

Exclude oil from entering perimeter and interior channels of Freeman Island.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

There are 4 breaks in the south shore of Freeman Island, requiring placement of 4 100' segments of 8x8+ Hboom and 4 20' segments 4X4+ to close barrow channel. The north shore has 2 openings on the east end requiring 25' 4X4.

Strategy 2-667.2

(USCG Strategic Objective: 7)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

Depending on winds, divert oil past windward pockets to minimize shore oiling for Freeman and to lesser extent for Snag Island.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

On westerly end of Freeman Island, deploy exclusion/deflection boom at the best angle to protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 Hboom, else a single layer of 8X8+. Repeat on Snag Isl if wind is moving oil from south or southwest.

Strategy 2-667.3

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

If forgoing strategies are inadequate to keep oil off marshes, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-667.1	400	150		8/12+/danforths & stakes		1/2			7 PERSON	regular inspection	5
2-667.2	1300	2600		6/22+/danforths & stakes		3/2			11 PERSON	frequent checks	7
2-667.3	2000	13000		18/22+/danforth & stakes		5/3			21 PERSON	frequent checks	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no land access. Nearest land access is across channel to Dutton Island. Nearest boat access is 3 miles southeast at McAvoy's Marina, Bay Point (8 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
NONE

WATER LOGISTICS:

Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR ISLAND

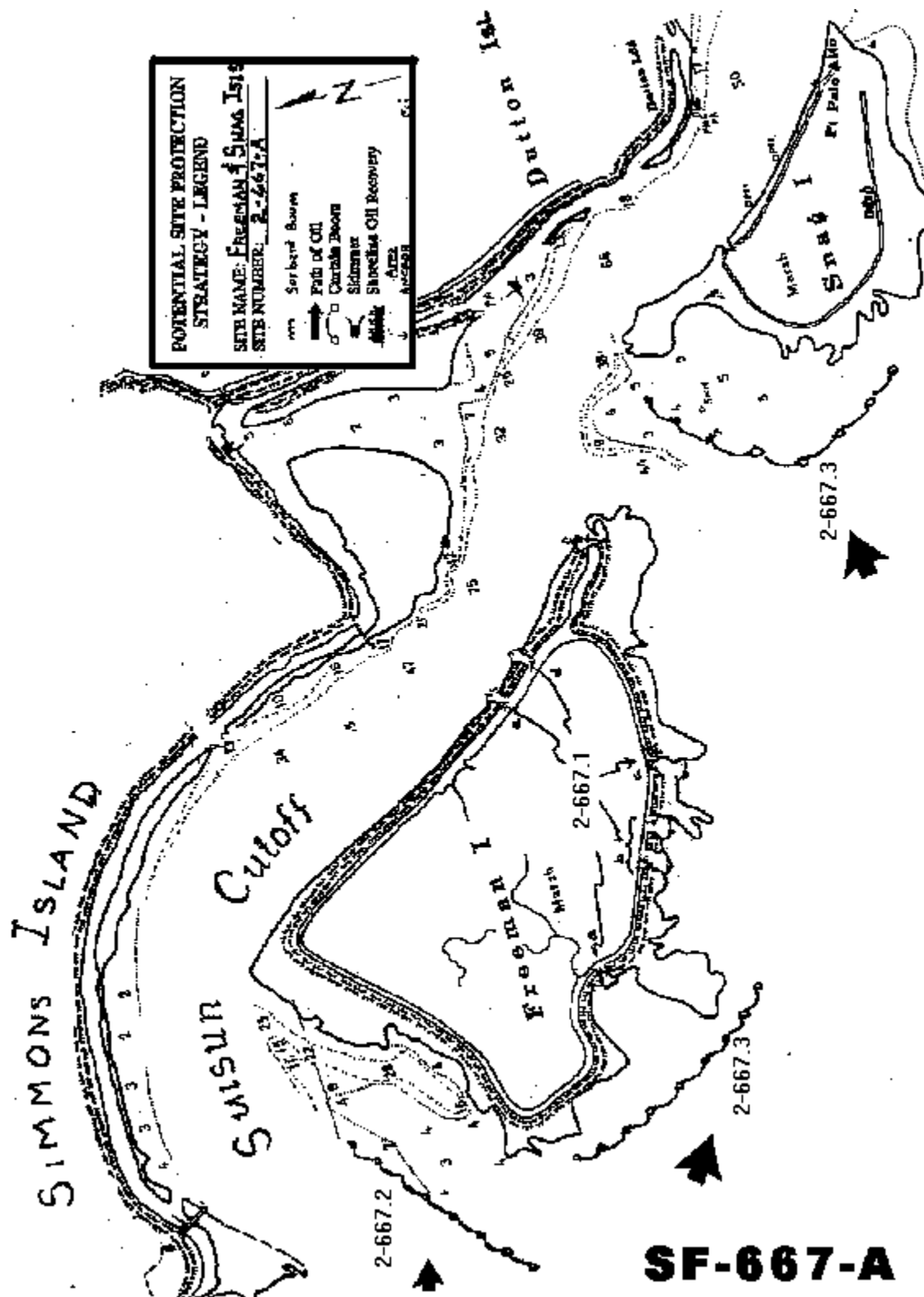
Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The only alternative to marina facilities are duck clubs at nearby Dutton and Simmons Isls including good docking facilities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



This Page Intentionally Left Blank

Dutton Island - Site Summary

2-668

-A

County: Solano
USGS: Honker Bay / Vine Hill

GRP: 6 **Latitude** 38 08.8 N **Longitude** 121 59.5 W
OSPR Map: 148 147 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes the marshy islands off the mouth of Noyce Slough at the west edge of Dutton Island and east to include the mouth of Champion Slough. The inner levee is ripped with intermittent emergent marsh. The levee is fronted with either a barrow channel or historic slough channels leaving an intermittent border of emergent marsh berm islands. These inlands and sloughs have extensive emergent undocked marsh and convoluted perimeters with habitat varying from pristine to high quality (> 5 miles). Several duck club docks are present.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

These marshy margins have A-protection priority always.

RESOURCES AT RISK

HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)

These marshy the highest protection priority at all times, and oil must be excluded at entries to small sloughs and barrow channels.

These marshy areas are prime habitat for most marsh dwelling species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

This is prime marsh bird and waterfowl habitat. Bird Sensitive Species include Suisun song sparrow and possibly black rail.

These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat.

These waters are used by adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move through this area: salmon, steel head, sturgeon, striped bass, American shad.

The emergent marshes here are typical tule-sedge mix with some cattail.
Several sensitive plants occur here: Mason's liliopsis, Suisun marsh aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402

2-668 -A Dutton Island - Site Strategy

County: Solano

CHART: 18656 Suisun Bay/Roe Island & vicinity

Latitude
38 08.8 N

Longitude
121 59.5 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes the marshy islands off the mouth of Noyce Slough at the west edge of Dutton Island and east to include the mouth of Champion Slough.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows and obstructions along shore and inside the barrow channels.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This locale is important both because it is a point where oil threatening to move into Honker Bay can be intercepted and directed to shore collection, and because there are extensive marshy margins and channels. Prime concern is intercepting oil threat to Honker Bay. Secondary issue is closing off side channels and marshes. Responders should minimize trampling of marsh and tracking oil into marshes and sediments. Small endangered species are underfoot.

SITE STRATEGIES

Strategy 2-668.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

Exclude oil from entering barrow channels and slough entrances.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

There are 2 openings at the east end (a: Noyce Sl): 600'4X4+Hboom and 3X(50'4x4+) for the levee channel (beware of rocks). Verify that the westerly barrow channel has been blocked with 50'4X4+ (opposite Freeman Isl per Simmons Island SS). Champion Slough exclusion requires 1000'4X4+ at levee channel (b) just east of duck club pier and 600' and 100'4X4 at opening (c) at east extreme

Strategy 2-668.2

(USCG Strategic Objective: 5,6)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If heavy oil is threatening Honker Bay and shorelines, divert oil to collection in quiet pockets.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy exclusion/deflection boom at the best angle to divert oil out of Suisun Cutoff to Dutton Isl shoreline. Depending on prevailing winds, plan shoreline capture location either at levee east of mouth of Noyce Slough (opposite Freeman Isl) or at the duck club (opposite Snag). Deploy 1500'8X8+ Hboom in a favorable array and angle to direct oil out of swift current to quiet shore waters. Cascade as necessary. Repeat if oil is likely to escape.

Strategy 2-668.3

(USCG Strategic Objective: 5,6)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If prevailing wind and oil threatens to overwhelm these measures, exclusion boom to protect shoreline especially easterly.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

If forgoing strategies are inadequate to keep oil off marshes, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-668.1										12 PERSON	regular inspection	5
2-668.2	1500			7/22#+/danforths with chain	3/2		portable & VT		1 extra line for scope	11 PERSON	3 man skimming teams	5,6
2-668.3		6000		6/22+/danforths & stakes	6/3				hovercraft/airboat; very shallow	18 PERSON	2 person tending	5,6

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road. Nearest boat access is 3 miles southeast at McAvoy's Marina, Bay Point (8 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:

Access limitations: depth, obstructions: VERY SHALLOW NEAR ISLAND, OBSTRUCTIONS

Boat Launching, Loading, Docking Launch at McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.
and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The duck clubs have power and good small boat docking facilities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: ☒ No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

POTENTIAL SITE PROTECTION STRATEGY - LEGEND

SITE NAME: DUTTON ISLAND
SITE NUMBER: SF-668-A

Suisun Bay
Path of Oil
Curtain Room
Shoreline
Shoreline Oil Recovery
PATER
ANCHOR
NO SCALE

Noyce Slough
Suisun Cutoff
Dutton Island
Honker Bay
Snag Island
GUN Club
2-668.1a
2-668.1b
2-668.1c
2-668.2a
2-668.2b

This Page Intentionally Left Blank

Honker Bay - Site Summary

2-670 -A

Honker Bay West - Wheeler Island Shore

2-671 -A

Honker Bay North - Van Sickle Island Shore

2-672 -A

Honker Bay East - Chipps Island Shore

2-673 -A

County: Solano
USGS: Honker Bay

GRP: 6 Latitude 38 04 N Longitude 121 56.3 W
OSPR Map: 148 Last ACP Update 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents). This is a large shallow bay in northeast Suisun Bay. It is fringed with marshes, berm islands, and accreting shorelines. Several islands border it, and some have access on their levees. On days having westerly winds, the fetch causes aggressive waves. This bay is a traditionally important as a waterfowl rafting area: the shallow bay provides forage and protection on calm days. This is also an important thoroughway for migrating fish: salmon, steelhead, striped bass, sturgeon, and delta smelts. The open waters of the bay are difficult to defend in the event of oil threat. There are various alternatives for the shoreline. For tactical reasons, the shoreline has been broken into three segments and are described in more detail below.

Honker Bay West - Wheeler Island Shore - Site Summary

2-671 -A

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes the 2 miles of bay frontage and berm islands of Wheeler Island from Champion Slough to Rock Creek. There is a barrow channel separating the historic marsh front from the current island levee resulting in extensive marshy margins. Although there is some emergent marsh along the ripped island levee, the outer perimeter is a premium strip of native marsh. It has occasional breaks connecting the barrow channel and inside channels to the bay. The outer bay margin is exposed to tangential wave action resulting in a mildly eroding shore with some accreting margins.

Honker Bay North - Van Sickle Island Shore - Site Summary

2-672 -A

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes About one mile of bay frontage and berm islands of Van Sickle Island from Rock Creek to Spoonbill Creek). There is a barrow channel separating part of the historic marsh front from the current island levee resulting in extensive marshy margins. Although there is some emergent marsh along the ripped island levee, the outer perimeter is a premium strip of native marsh. It has occasional breaks connecting the barrow channel and inside channels to the bay. The outer bay margin indirect wave action resulting in a extremely shallow, accreting shoreline near Spoonbill Creek.

Honker Bay East - Chipps Island Shore - Site Summary

2-673 -A

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes the 2 miles of bay frontage and berm islands of the westerly margin of Chipps Island. There is a barrow channel running the entire length of the shore which separates the historic marsh front from the current island levee resulting in extensive marshy margins. the outer perimeter is a premium strip of native marsh. It has two breaks connecting the barrow channel the bay. The outer bay margin is exposed to direct wave action resulting in a mildly eroding shore with some accreting margins at the south tip.

SEASONAL and SPECIAL RESOURCE CONCERNS

(seasonal issues, special status spp present, water intakes)

These marshy areas have A-protection priority at all times. Major seasonal concerns are the massive numbers of waterfowl which raft on the bay waters in the winter, and sensitive species of fish and salmonids which seasonally use or pass thought this area.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

These marshy margins and berm islands have highest protection priority at all times. Oil must be prevented from entering barrow channels and interior sloughs by exclusion booming. These marshy areas are excellent habitat for all manner of marsh species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The marshy margins are prime marsh bird and waterfowl habitat including Suisun song sparrow and possibly black rail. The open water of honker bay is used by massive numbers of diving ducks, puddle ducks and other water birds during the wintering season.

These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat.

Fish using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move though this area: salmon, steel head, sturgeon, striped bass, American shad.

The emergent marshes here are typical tule-sedge mix with some cattail. Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster.

Honker Bay - Site Summary (cont'd)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance				
Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
	Peter Baye	U S Army Corps of Engineers	(415) 744-3322	

2-671 -A Honker Bay West - Wheeler Island Shore - Site Strategy

Latitude Longitude
38 04 N 121 56.3 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes the 2 miles of bay frontage and berm islands of Wheeler Island from Champion Slough to Rock Creek.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows and obstructions along shore and inside the barrow channels.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Permeation of emergent marsh is primary concern. Also watch for oil penetration of animal burrows.

SITE STRATEGIES

Strategy 2-671.1

(USCG Strategic Objective: 5) Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

Exclude oil from entering barrow channels and slough entrances.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

There are multiple breaks in the south shore, requiring minimum deployment of 8 segments of 8x8+ or 4X4+ Hboom (depending on severity of wave action) to close barrow channel and slough openings. Anchor boom across the channel entries, leaving enough trailing ends to insure a seal and prevent shortcircuiting.

Strategy 2-671.2

(USCG Strategic Objective: 7) Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

If heavy oil is approaching the shore, divert the oil to collection areas.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy exclusion/deflection boom at the best angle fend oil past marshfront to designated collection area.

Strategy 2-671.3

(USCG Strategic Objective: 8) Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997

Objective or Prevention Condition

Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy exclusion/deflection boom at the best angle fend oil past marshfront to designated collection area. Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 Hboom, else a single layer of 8X8+: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). Requires 11,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-671.1	500	700		6/12+/danforhts & stakes		2/4				15 PERSONS	regular inspection	5
2-671.2	1300			3/22+/danforhts		3/2				11 PERSON	frequent checks	7
2-671.3	11000			12/22+/danforhts & stakes		4/6			hovercraft. air boat; 4 very shallow	25 PERSONS	2 boomtenders	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road. Nearest boat access is 3 miles southeast at McAvoy's Marina, Bay Point (8 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:

Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR SHORE.

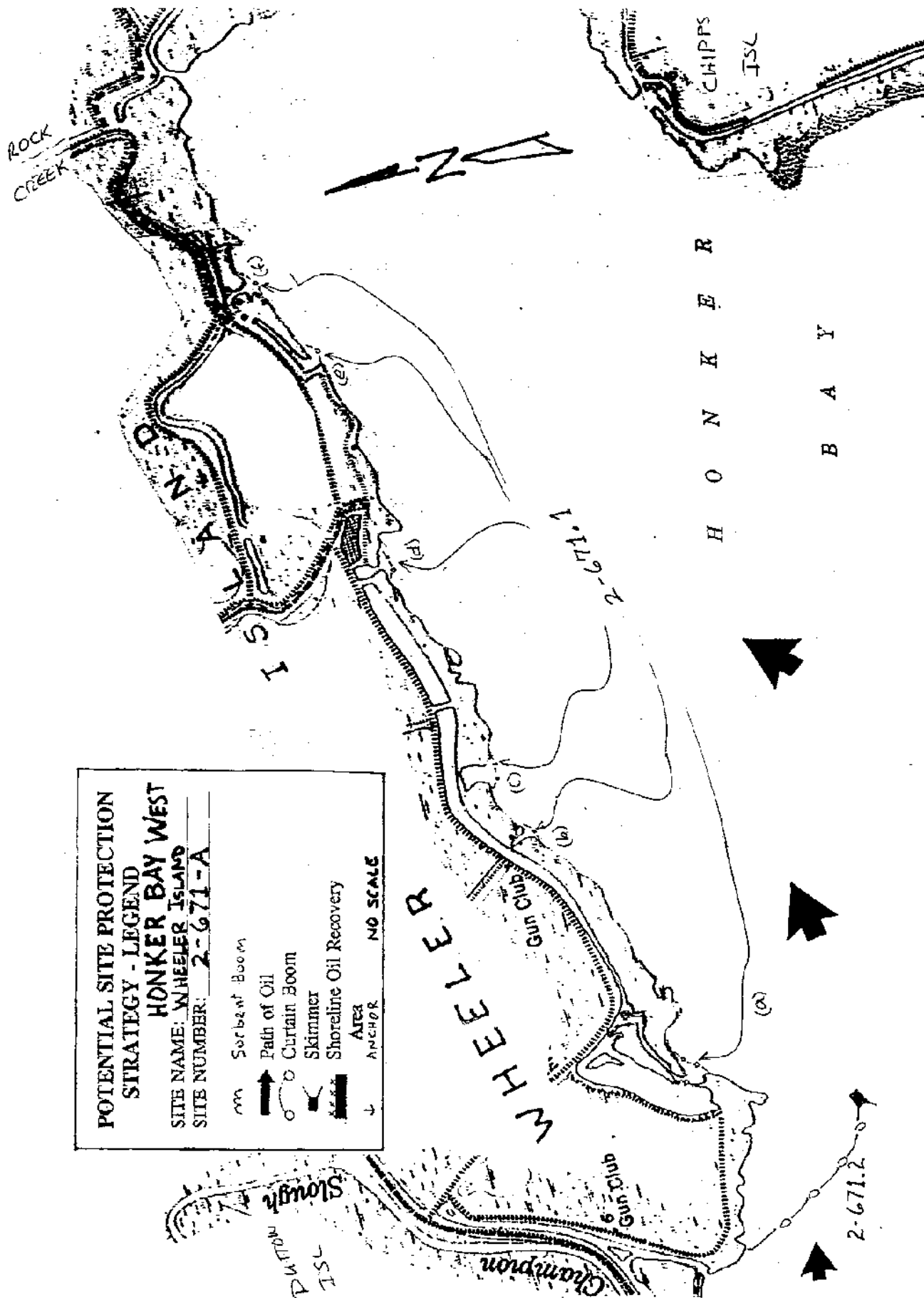
Boat Launching, Loading, Docking McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.
and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The duck clubs have power and good small boat docking facilities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



2-672 -A Honker Bay North - Van Sickle Island Shore - Site Strategy

County: Solano

CHART: SUISUN BAY 18658/18556/18656

Latitude
38 04 N

Longitude
121 56.3 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site:

This site includes About one mile of bay frontage and berm islands of Van Sickle Island from Rock Creek to Spoonbill Creek).

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site:

There are shallows and obstructions along shore and inside the barrow channels.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Permeation of emergent marsh is primary concern. Also watch for oil penetration of animal burrows.

SITE STRATEGIES

Strategy 2-672.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997 09/04/1997

Objective or Prevention Condition

Exclude/collect oil: exclude from entering Spoonbill Creek and barrow channels and divert to collection on Van Sickle shore.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

(site a) Deploy Hboom from Chipps Island across the mouth of Spoonbill Creek at best angle to collect oil at the Van Sickle Shore.

Establish Shore Side Skimming (SSS). Repeat deployment if currents or waves are likely to overtop or underflow collection boom.

(sites b, c, & d) Close the openings to barrow channels using two layers of swamp boom, backed by sorbent boom. Anchor close to shore leaving trailing ends to insure a boom seal at shoreline (to prevent short-circuiting past boom.)

Strategy 2-672.2

(USCG Strategic Objective: 6)

Dates: SISRS Approved last tested ACP date

07/06/1997 09/04/1997

09/04/1997

Objective or Prevention Condition

Deflect oil to collection site: use prevailing winds

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Establish a second shore side skimming point on Van Sickle Island. Deploy deflection booms at best angle to direct oil past marshfronts to collection. This site has extreme shallows and obstructions - particularly at lower tides.

Strategy 2-672.3

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/04/1997 09/04/1997

Objective or Prevention Condition

Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy exclusion/deflection boom at the best angle fend oil past marshfront to designated collection area. Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 Hboom, else a single layer of 8X8+: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). Requires 12,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-672.1	700	300		8/12+/danforths		4/2	SSS		1	10 PERSONS	2 / 1 boat: continuous	5
2-672.2	1200			5/22+/danforths w chain		1/1	SSS		1 hovercraft, airboat	10 PERSON	use above team- request	6
2-672.3	12000			12/22+/danforths & stakes		4/6			very shallow Bboat,	25 PERSONS	2 boomtenders	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road. Nearest boat access is 3 miles southeast at McAvoy's Marina, Bay Point (8 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:

Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR SHORE.

Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez iMarina.

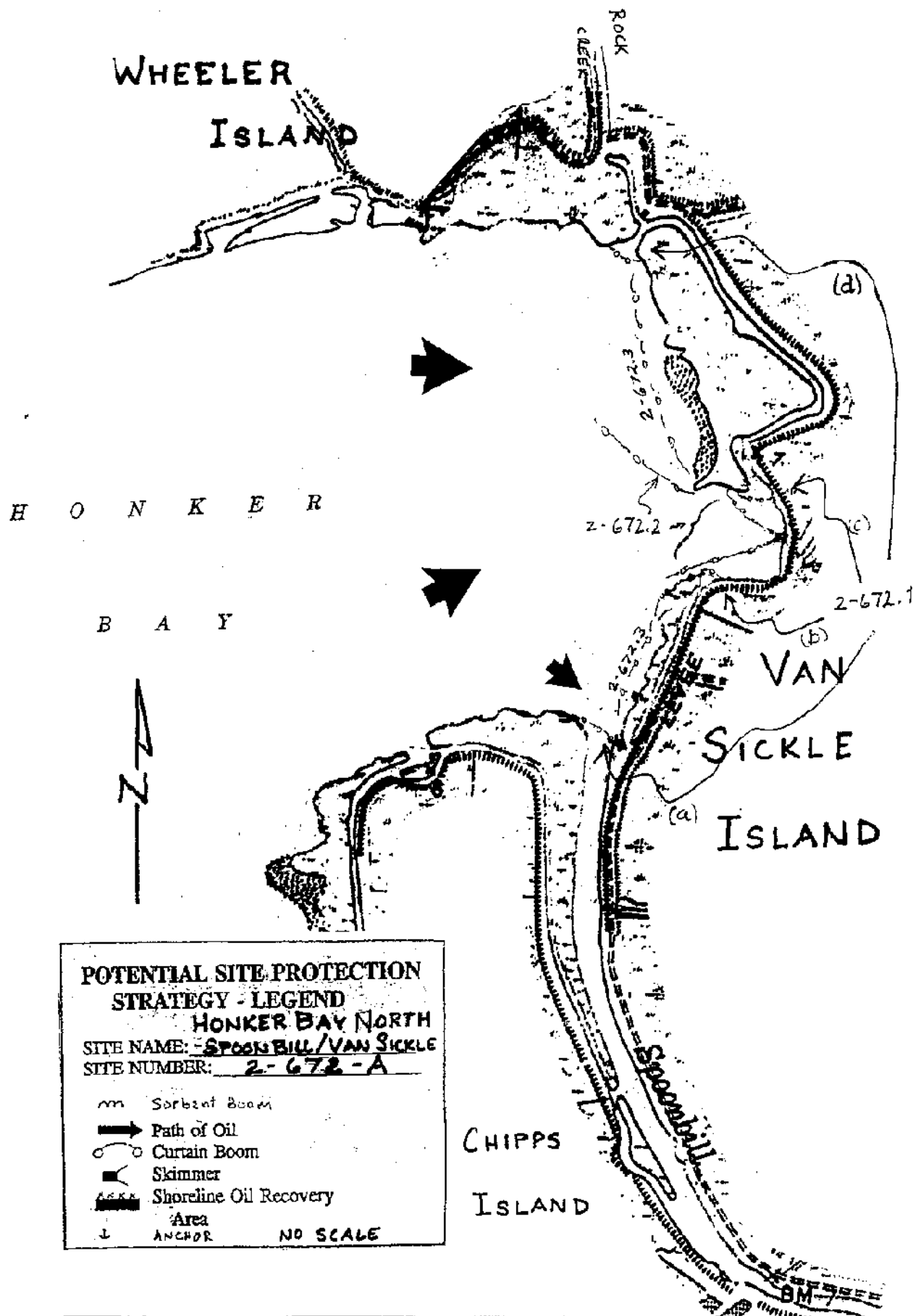
FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The duck clubs have power and good small boat docking facilities.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

☒ No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



2-673 -A Honker Bay East - Chipps Island Shore - Site Strategy

County: Solano

CHART: SUISUN BAY 18658/18556/18656

Latitude
38 04 N

Longitude
121 56.3 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes the 2 miles of bay frontage and berm islands of the westerly margin of Chipps Island.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows and obstructions along shore and inside the barrow channels.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Permeation of emergent marsh is primary concern. Also watch for oil penetration of animal burrows.

SITE STRATEGIES

Strategy 2-673.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/22/1997 09/04/1997
09/22/1997

Objective or Prevention Condition

Exclude oil from entering barrow channels and slough entrances.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Close the two openings to the barrow channel.

(Site a) Use two layers of swamp boom (300'), backed with sorbent boom (200'), to exclusion boom the south opening. Anchor boom across channel entries and leave a trailing end to make a tidal seal. Observe and repeat if wind chop is overwhelming the boom. There are submerged pilings in this area.

(Site b) The north opening must be boom both at the mouth (150' swampboom) and inside where the two barrow channels branch off (100' Swboom).

Strategy 2-673.2

(USCG Strategic Objective: 6)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/22/1997 09/04/1997

Objective or Prevention Condition

At Pt Simmons, deflect the oil past site to keep oil in channel and to avert carry-back into Honker Bay on eddy.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy deflection boom (600') at Simmons Pt on a shallow contour to keep oil in the channel best and stop it from angle fend oil past marshfront to designated collection area. BEWARE: This area west of Simmons Point is an underground pipe corridor - use anchors with extreme caution!

Strategy 2-673.3

(USCG Strategic Objective: 8)

Dates: SISRS Approved last tested ACP date
07/06/1997 09/22/1997 09/04/1997

Objective or Prevention Condition

Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

Deploy exclusion/deflection boom at the best angle fend oil past marshfront to designated collection area. Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 Hboom, else a single layer of 8X8+: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, iCalifornia. (Hayes and Montelo, 1994). Requires 13,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy	hboom swpbm xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-673.1	550	3/12+/danforth and 4 stakes		1/1			5 PERSONS	regular inspection	5
2-673.2	600	3/22+/danforth w chain		1/1			11 PERSON	frequent checks	6
2-673.3	13000			6/6		shallow Bboats, 1	25 PERSONS	2 boomtenders	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road. Nearest boat access is 3 miles southeast at McAvoy's Marina, Bay Point (8 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:

Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR SHORE.

Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Best staging sites are nearby McAvoy/Harris Marina at Bay Point. PG&E, Pittsburg Marina, and Martinez Marina are alternates. The duck clubs on Chipps Island have power and good small boat docking facilities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

POTENTIAL SITE PROTECTION STRATEGY - LEGEND

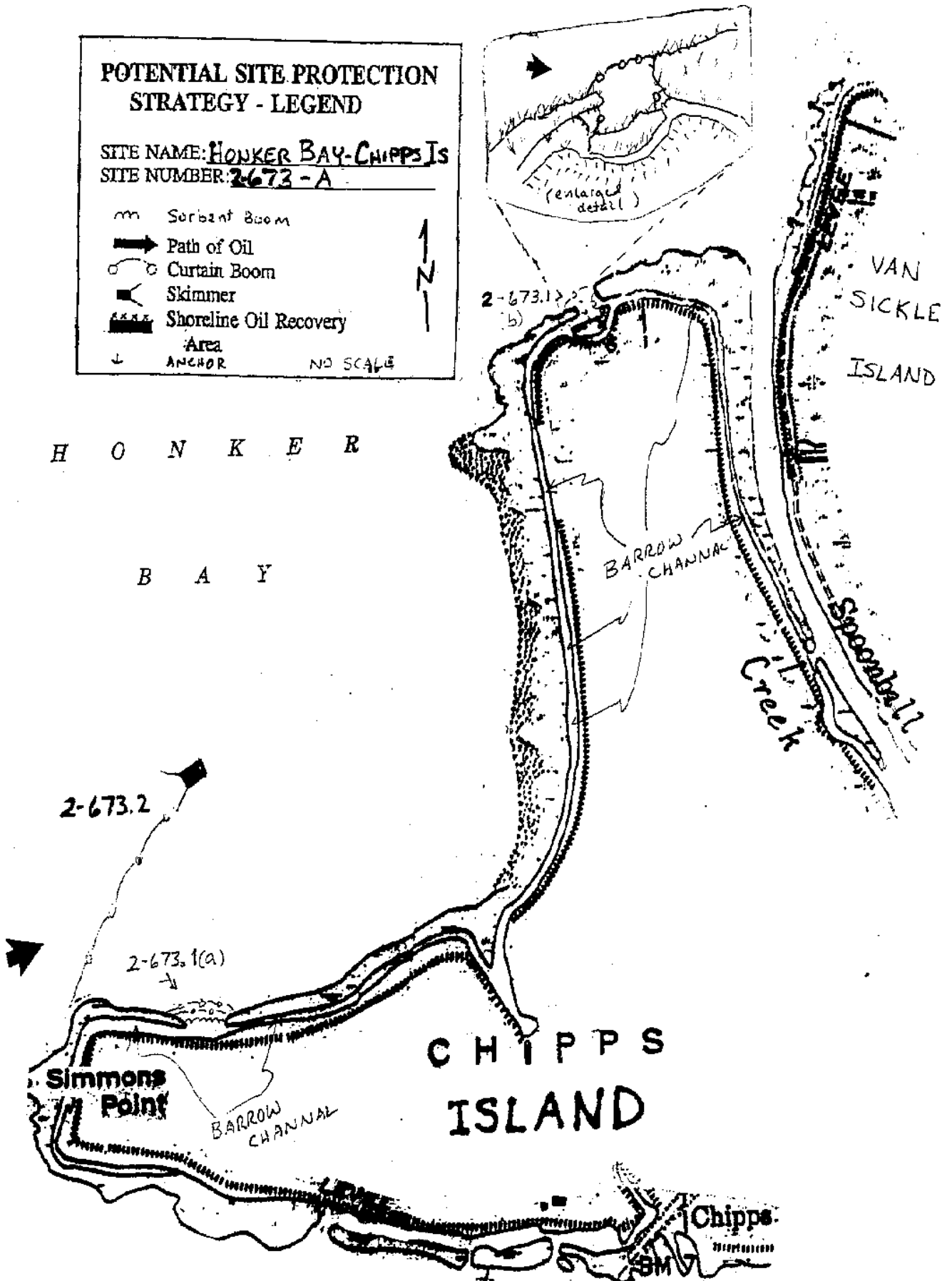
SITE NAME: HONKER BAY-CHIPPS IS
SITE NUMBER: 2-673-A

- m Sorbent Boom
- ➔ Path of Oil
- ○ Curtain Boom
- ⏏ Skimmer
- ▬ Shoreline Oil Recovery
- Area
- ↓ ANCHOR

NO SCALE

H O N K E R

B A Y



Suisun Marsh West: Suisun Slough Drainage - Site Summary

2-680 -A

County: Solano
USGS: Benicia/Vine Hill/Fairfield/Cordelia

GRP: 6 **Latitude** 38 10 N **Longitude** 122 05 W
OSPR Map: 146 147 142 **Last ACP Update** 10/05/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including Goodyear Slough, Cordelia Slough, Wells Slough, Pelfier Slough, Sheldrake Slough, Boynton Slough, Peytonia Slough, Hill Slough, Cutoff Slough. This site includes about one third of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but large tracts are in public ownership including California State wildlife refuges.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

This marsh has A-level protection priority at all times.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites in California. It is saltgrass, pickleweed, and tule/sedge dominated.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species here include California clapper rail, black rail, Suisun song sparrow, and Suisun common yellowthroat.

Special Status animals: saltmarsh harvest mouse, Suisun ornate shrew, and western pond turtle. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, and mink.

These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.

A large number of Special Status plant species occur here including Suisun marsh aster, Mason's lilaeopsis, Delta tule pea, Suisun thistle, and soft birds beak.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402

2-680 -A Suisun Marsh West: Suisun Slough Drainage - Site Strategy

County: Solano

CHART: SUISUN BAY 18657/18652

Latitude
38 10 N

Longitude
122 05 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including Goodyear Slough, Cordelia Slough, Wells Slough, Pelfier Slough, Sheldrake Slough, Boynton Slough, Peytonia Slough, Hill Slough, Cutoff

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows throughout the sloughs.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Primary is limiting the extent of oiling of marshy channels and oiling of vegetation and wildlife. The strategies are intended to "box" oil into a minimal exposure of channel and marsh.

SITE STRATEGIES

Strategy 2-680.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 10/05/1997

Objective or Prevention Condition

Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close all side sloughs.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

This is a generic strategy since exact origin of a spill is unknown but multiple threat locals exist including the entire Santa Fe Pacific pipeline corridor. Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment. Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use waterbased skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-680.1	3000			24/22+/danforths		4/4	portable & VT		4 Bboats; very shallow; 1 hovercraft	14 PERSONS	frequent checks	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This area is mostly accessible by water from Suisun City or Pierce Harbor. There is limited land access from I-680 by exiting at Lake Herman, Marsh view and other exits which lead to access mostly private duck club roads along the margin.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
VARIABLE DEPENDING ON LOCATION.

WATER LOGISTICS:

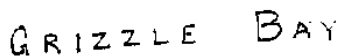
Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES
Boat Launching, Loading, Docking Suisun City marinas and Pierce Harbor.
and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Suisun City, Martinez Marina, Benicia Marina or Pierce harbor. All the above may provide adequate support for field post.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



San Francisco Bay & Delta
9973-GRP6-90

This Page Intentionally Left Blank

Suisun Marsh Central: Grizzly Isl. / Montezuma Sl - Site Summary

2-690

-A

County: Solano
USGS: Fairfield/Honker Bay/Denverton

GRP: 6 Latitude 38 08 N Longitude 121 55 W
OSPR Map: 142 148 143 Last ACP Update 10/05/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including to Montezuma Slough including Cutoff Slough, Tree Slough, Island Slough, Frost Slough, Cross Slough, Roaring River Slough but not Nurse / Denverton Sloughs. This site includes about one half of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but large tracts are in public ownership including California State wildlife refuges and Solano County Refuges.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

This marsh has A-level protection priority at all times.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites is California. It is saltgrass, pickleweed, and tule/sedge dominated. There are also upland areas which harbor remnant communities of native plants (Rush Ranch).

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species here include black rail, Suisun song sparrow, Suisun common yellowthroat, and California clapper rail.

Special Status animals: saltmarsh harvest mouse, Suisun ornate shrew and western pond turtle. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, mink, reptiles, and tule elk.

These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.

A large number of Special Status plant species occur here including Suisun marsh aster, Suisun thistle, soft birds beak, Delta tule pea and Mason's lilaeopsis.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402

2-690 -A Suisun Marsh Central: Grizzly Isl. / Montezuma Sl - Site Strategy

County: Solano

CHART: SUISUN BAY 18652/18659/18656

Latitude
38 08 N

Longitude
121 55 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including to Montezuma Slough including Cutoff Slough, Tree Slough, Island Slough, Frost Slough, Cross Slough, Roaring River Slough but not Nurse / Denver Sloughs.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows throughout the sloughs.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Primary is limiting the extent of oiling of marshy channels and oiling of vegetation and wildlife. The strategies are intended to "box" oil into a minimal exposure of channel and marsh.

SITE STRATEGIES

Strategy 2-690.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 10/05/1997

Objective or Prevention Condition

Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close side channels.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

This is a generic strategy since the exact origin of an oil spill can not be predicted, and the east side pipeline corridor crosses several sloughs: Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment.

Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use waterbased skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-690.1		4000		32/22+/danforths		5/8	portable & VT		4 bboat: shallow draft; 1 hovercraft	31 PERSONS	frequent checks	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This area is mostly accessible by water from Suisun City or Pierce Harbor. There is limited land access from via Hwy 12 to Grizzly Island Road at Suisun City or Denver Road (to the easterly portion). Most subsequent access is private duck club roads along the margin.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
VARIABLE DEPENDING ON LOCATION.

WATER LOGISTICS:

Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES

Boat Launching, Loading, Docking and Services Available: There is a minimal boat ramp on Grizzly Island (parking lot 7) near Meins Landing. Otherwise, Suisun City marinas, Pittsburg, Martinez / Benicia and Pierce Harbor marinas.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

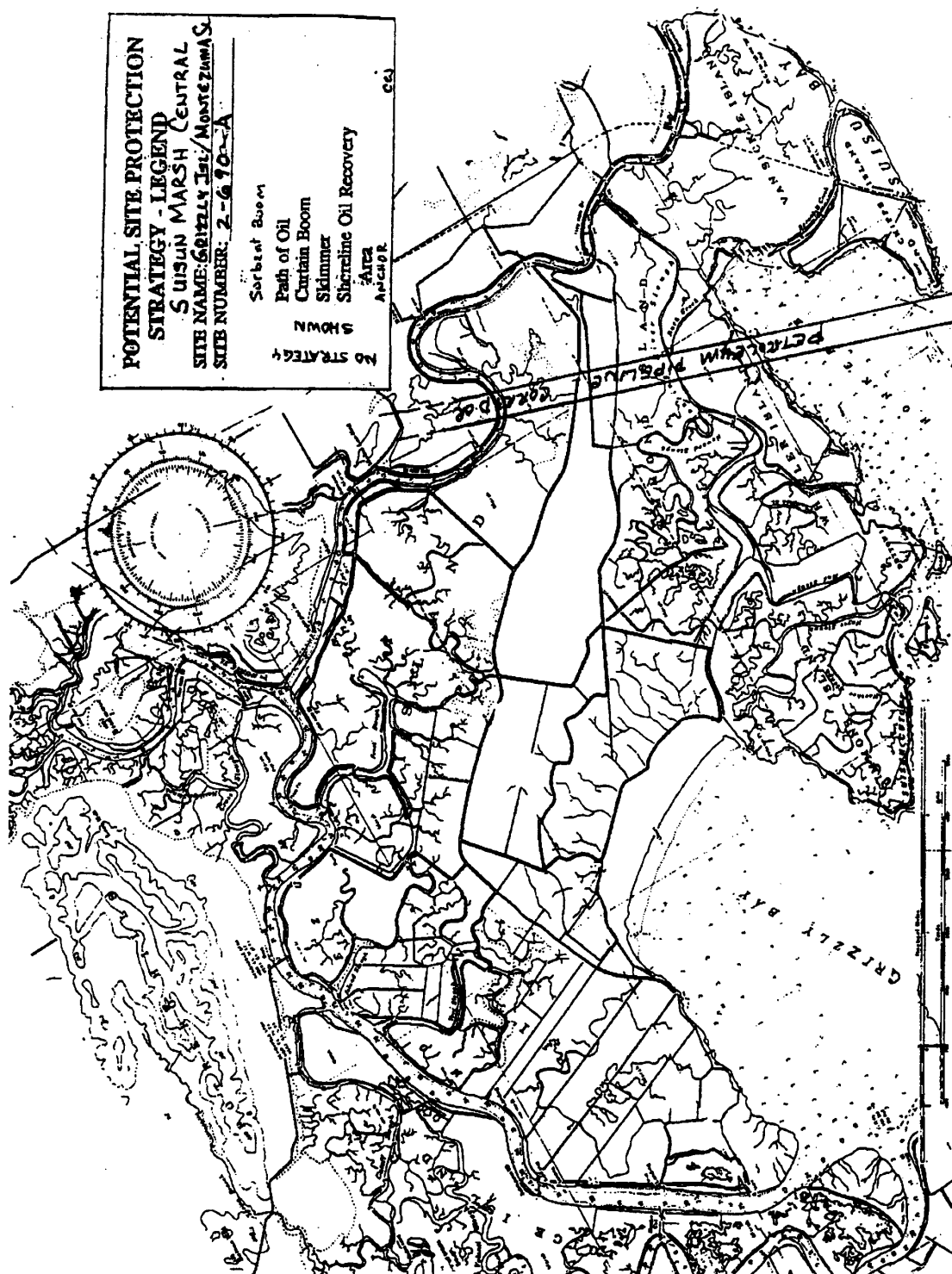
Deploy from Suisun City, Martinez Marina, Benicia Marina or Pittsburg Marina. All the above may provide adequate support for field post, as may Grizzly Island Wildlife Refuge.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

☒ No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

NO STRATEGY IS SHOWN: MAP FOR REFERENCE ONLY



This Page Intentionally Left Blank

-A

County: Solano
USGS: Denverton

GRP: 6 Latitude 38 11 N Longitude 121 55 W
OSPR Map: 143 Last ACP Update 10/05/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site extends upstream from the mouth of Nurse Slough on Montezuma Slough and includes Denverton and Luco Sloughs and all the marshy areas and sloughs tributary. This site includes about one sixth of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but a few sites in public ownership.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

This marsh has A-level protection priority at all times.

RESOURCES AT RISK**HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)**

This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites in California. It is saltgrass, pickleweed, and tule/sedge dominated. There are also upland areas which harbor remnant communities of native plants.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species include Suisun song sparrow.

Special Status mammal: saltmarsh harvest mouse. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, mink.

These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.

A large number of Special Status plant species occur here including Suisun marsh aster, Delta tule pea and Mason's lilaeopsis.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES**KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance**

Type	Name	Organization	Phone	FAX
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Kent Nelson	Ca Dept of Water Resources	(916) 227-7581	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 944-7800	
	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402

2-695 -A Suisun Marsh North: Denverton / Nurse Sl Drainage - Site Strategy

County: Solano

CHART: SUISUN BAY 18652/18656

Latitude
38 11 N

Longitude
121 55 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site extends upstream from the mouth of Nurse Slough on Montezuma Slough and includes Denverton and Luco Sloughs and all the marshy areas and sloughs tributary.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

There are shallows throughout the sloughs.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Primary is limiting the extent of oiling of marshy channels and oiling of vegetation and wildlife. The strategies are intended to "box" oil into a minimal exposure of channel and marsh.

SITE STRATEGIES

Strategy 2-695.1

(USCG Strategic Objective: 5)

Dates: SISRS Approved last tested ACP date
07/06/1997 10/05/1997

Objective or Prevention Condition

Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close side channels.

Technique Details

Check here means "No strategy diagram": () Check here means "Contact CCC": ()

This is a generic spill response strategy since it is not possible to predict the exact location of a spill origin, and a pipeline corridor lies on the east side of the site: Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment. Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use waterbased skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-695.1		2000		16/22+/danforths		3/6	portable & VT		4 Bboat: shallow draft; 1 hovercraft	21 PERSONS	frequent checks	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This area is very inaccessible. There is limited land access via private duck club and military roads accessed from Hwy 12 to Shiloh Road (to the easterly edge) and Grizzly Island Road. Water access is from Montezuma Slough via Nurse Slough.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal...locked gates)
MOSTLY FOOT, ATV, DEPENDING ON LOCATION

WATER LOGISTICS:

Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES

Boat Launching, Loading, Docking There is a minimal boat ramp on Grizzly Island (parking lot 7) near Meins Landing. Otherwise,
and Services Available: Suisun City marinas, Pittsburg, Martinez / Benicia and Pierce Harbor marinas.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Deploy from Suisun City, Martinez Marina, Benicia Marina or Pittsburg Marina. All the above may provide adequate support for field post, as may Grizzly Island Wildlife Refuge.

COMMUNICATIONS LIMITATIONS / PROBLEMS:

X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

This Page Intentionally Left Blank